Final Announcement

Registration • Hotel accommodation

June 8-13, 2008 Acireale, Sicily, Italy

3rd International Conference

smart

materials structures systems

smart materials
& micro/nano-systems

smart textiles

smart optics

intelligent structures
mechatronics & robotics

biomedical applications
of smart materials
nanotechnology and
micro/nano engineering

bio-inspired materials
& bionic systems

CIMTEC

CIMTEC
2008

www.cimtec-congress.org

3rd International Conference

smart

materials structures systems

INVITATION TO ATTEND !

The 3rd International Conference "Smart Materials, Structures and Systems" will be held in Acireale (Catania District), Sicily, Italy, on June 8 to 13, 2008. The conference – that follows the ones previously held in Florence, Italy – is organized as a "junior" edition of the recognized CIMTEC series of international meetings which have been established as from the end of sixties.

Intensive research carried out worldwide for creating higher forms of materials, structures and systems by providing them with "life" functions, resulted in a relatively high level of technology readiness with several applications now emerging, demonstrating that smart materials technologies have matured well beyond the conceptual stage. Widespread use of nanotechnology concepts and tools and availability of multiscale computation models coupled with the exponential growth of computer capability are fuelling the rate of advancement of the field. This also is increasingly taking advantage from the merging of materials science and engineering with information deriving from a deeper understanding of biological processes and from the highly effective evolutionary solutions created by nature along million years.

The over seven hundred technical contributions featured by the several Symposia of the 3rd International Conference "Smart Materials, Structures and Systems" will cover outstanding areas of the subject from the molecular and nano scales to large complex integrated systems.

The Conference Committees are pleased to invite you to foster progress in the field by contributing to discussions within the frames of what promises to be an exciting meeting, and to enjoy the immense, unique, artistic heritage and wonderful landscape of Sicily.

Pietro Vincenzini
General Chair CIMTEC Conferences

SUMMARY

CONFERENCE COMMITTEES

General Chair CIMTEC Conferences

Pietro Vincenzini, *Italy*

3rd INTERNATIONAL CONFERENCE "SMART MATERIALS, STRUCTURES AND SYSTEMS"

Steering Committee

Yoseph Bar-Cohen, *USA* Fabio Casciati, *Italy* Richard O. Claus, *USA* Brian Culshaw, *UK* Nico F. de Rooij, *Switzerland* Danilo De Rossi, *Italy* Dermot Diamond, *Ireland* Luigi Fortuna, *Italy* Toshio Fukuda, *Japan* Stanislav Gorb, *Germany* Kazuyuki Hirao, *Japan* Vinod D. Labhasetwar, *USA* B.L. (Les) Lee, *USA* André Preumont, *Belgium* Giancarlo C. Righini, *Italy* Emanuele Rimini, *Italy* Shuichi Shoji, *Japan* Yasuhiko Tabata, *Japan* Vijay K. Varadan, *USA* Gordon G. Wallace, *Australia* Chung-Bang Yun, *Korea*

National Programme Committee

Stefano Besseghini Federico Carpi Fabio Casciati Giuseppe D'Arrigo Danilo De Rossi Luigi Fortuna Salvatore Graziani Rita Paradiso Giancarlo Righini

SYMPOSIUM A - Smart Materials and Micro/Nanosystems

Symposium Co-Chairs: Nico F. de ROOIJ, *Switzerland* Shuichi SHOJI, *Japan* Vijay K. VARADAN, *USA* Gordon G. WALLACE, *Australia* *Programme Chair:* Giuseppe D'ARRIGO, *Italy* *Special Session A-9 Coordinator:* Shashi PAUL, *UK* *Members:* Slavko AMON, *Slovenia* Wolfgang BENECKE, *Germany* Amar S. BHALLA, *USA* Ian BOND, *UK* Gregory P. CARMAN, *USA* Andrejs CEBERS, *Latvia* Zhong Yang CHENG, *USA* Seung-Bok CHOI, *Korea* Marcelo J. DAPINO, *USA* Gary FEDDER, *USA* Faramarz GORDANINEJAD, *USA* Zhibin GUAN, *USA* Jongyoon HAN, *USA* Masanori HAYASE, *Japan* Christofer HIEROLD, *Switzerland* Klas HJORT, *Sweden* Daniel J. KLINGENBERG, *USA* Jing-Feng LI, *P.R. China* Liwei LIN, *USA* John D. MADDEN, *Canada* Evangelos MANIAS, *USA* Mehran MEHREGANY, *USA* Carmen MOLDOVAN, *Romania* Binu K. MUKHERJEE, *Canada* Masami NAKANO, *Japan* Jay NARAYAN, *USA* Siavouche NEMAT-NASSER, *USA* Hideya NISHIYAMA, *Japan* Ernst OBERMEIER, *Germany* Stefan ODENBACH, *Germany* Candido Fabrizio PIRRI, *Italy* Eckhard QUANDT, *Germany* Emanuele RIMINI, *Italy* Ahmad SAFARI, *USA* Kazuo SATO, *Japan* Hans-Jörg SCHNEIDER, *Germany* Mohsen SHAHINPOOR, *USA* Mark A. SHANNON, *USA* Ping SHENG, *Hong Kong* John SUMMERSCALES, *UK* Timothy M. SWAGER, *USA* Osamu TABATA, *Japan* Rongjia TAO, *USA* Francis E.H. TAY, *Singapore* Eugene TERENTJEV, *UK* Kenji UCHINO, *USA* Anthony WALTON, *UK* Roger W. WHATMORE, *Ireland* Roland ZENGERLE, *Germany* Yitshak ZOHAR, *USA* Miklos ZRINYI, *Hungary*

SYMPOSIUM B - Smart Optics: Materials - Devices - Applications

Symposium Co-Chairs: Richard O. CLAUS, *USA* Brian CULSHAW, *UK* Kazuyuki HIRAO, *Japan* Giancarlo C. RIGHINI, *Italy (Programme Chair)* Members: Hiroshi ASANUMA, *Japan* Hartmut BARTELT, *Germany* Bernhard E. BOSER, *USA* See Leang CHIN, *Canada* Sang H. CHOI, *USA* Colin CUNNINGHAM, *UK* Antonello CUTOLO, *Italy* Chris DAINTY, *Ireland* Aaron DANNER, *Singapore* Majid EBRAHIM-ZADEH, *Spain* Maurizio FERRARI, *Italy* Qihuang GONG, *P.R. China* Alan H. GREENAWAY, *UK* Kazuhiro HANE, *Japan* Hans Peter HERZIG, *Switzerland* Seppo HONKANEN, *Finland* Mile IVANDA, *Croatia* Wolfgang KNOLL, *Germany* Klaus-Dieter KUHNERT, *Germany* El-Hang LEE, *Korea* Keith LEWIS, *UK* Robert MAGNUSSON, *USA* Juergen MOHR, *Germany* Lorenzo PAVESI, *Italy* Stefano PELLI, *Italy* Jianrong QIU, *P.R. China* Renata REISFELD, *Israel* Kevin ROBBIE, *Canada* John A. ROGERS, *USA* Andrea SIMONI, *Italy* Alan SMITH, *UK* Olav SOLGAARD, *USA* William B. SPILLMAN, Jr., *USA* Thomas J. SULESKI, *USA* Setsuhisa TANABE, *Japan* R.P. TATAM, *UK* Tetsuo TSUTSUI, *Japan* Richard A. VAIA, *USA* Wim C. VAN ETTEN, *The Netherlands* Tomasz R. WOLINSKI, *Poland* Ming C. WU, *USA* Chih-Chung YANG, *Taiwan* Toshinobu YOKO, *Japan* Hans ZAPPE, *Germany* Jianqiang ZHU, *P.R. China*

SYMPOSIUM C - Emboding Intelligence in Structures and Integrated Systems

Symposium Co-Chairs: Fabio CASCIATI, *Italy (Programme Chair)* B.L. (Les) LEE, *USA* André PREUMONT, *Belgium* Chung-Bang YUN, *Korea* *Members:* Georges AKHRAS, *Canada* A. Emin AKTAN, *USA* Daniel BALAGEAS, *France* Amr M. BAZ, *USA* Ayech BENJEDDOU, *France* Lawrence A. BERGMAN, *USA* Jennifer T. BERNHARD, *USA* Christian BOLLER, *UK* Fu-Kuo CHANG, *USA* Chang-Koon CHOI, *Korea* Guido DE ROECK, *Belgium* Andrea DEL GROSSO, *Italy* Mario DI PAOLA, *Italy* Adel Galal EL-ATTAR, *Egypt* Sami EL-BORGI, *Tunisia* Lucia FARAVELLI, *Italy* Dan M. FRANGOPOL, *USA* Michael I. FRISWELL, *UK* Claus-Peter FRITZEN, *Germany* Yozo FUJINO, *Japan* Ulrich GABBERT, *Germany* Devendra P. GARG, *USA* Victor GIURGIUTIU, *USA* A. GUEMES, *Spain* Jan HOLNICKI-SZULC, *Poland* Daniel J. INMAN, *USA* Hans IRSCHIK, *Austria* Camille ISSA, *Lebanon* Wilfred D. IWAN, *USA* R.S. JANGID, *India* Jan-Ming KO, *Hong Kong* Chang Ghee KOH, *Singapore* Agnessa S. KOVALEVA, *Russia* Wei-Hsin LIAO, *Hong Kong* Shih Chi LIU, *USA* Chin-Hsiung LOH, *Taiwan* Xilin LU, *China* Jerome P. LYNCH, *USA* Georges MAGONETTE, *Italy* C.S. MANOHAR, *India* Sami MASRI, *USA* Annibale Luigi, MATERAZZI, *Italy* Akira MITA, *Japan* Satish NAGARAJAIAH, *USA* Aly S. NAZMY, *United Arab Emirates* Akira NISHITANI, *Japan* Jinping OU, *China* Christophe A. PAGET, *UK* Costas PAPADIMITRIOU, *Greece* Sergio PELLEGRINO, *UK* E. REITHMEIER, *Germany* José RODELLAR BENEDE, *Spain* Bijan SAMALI, *Australia* Rahmat SHOURESHI, *USA* Robert E. SKELTON, *USA* Tsu-Teh SOONG, *USA* B.F. SPENCER Jr., *USA* Masanori SUGISAKA,

Japan Costas A. SYRMAKEZIS, *Greece* Liqiong TANG, *New Zealand* Masaru UCHIYAMA, *Japan* Tetsuhiko UEDA, *Japan* Sybrand VAN DER ZWAAG, *The Netherlands* Fabrizio VESTRONI, *Italy* Pennung WARNITCHAI, *Thailand* Zhishen WU, *Japan* Fuh-Gwo YUAN, *USA*

SYMPOSIUM D - Biomedical Applications of Smart Materials, Nanotechnology and Micro/Nano Engineering

Symposium Co-Chairs: Danilo DE ROSSI, *Italy (Programme Chair)* Dermot DIAMOND, *Ireland* Vinod D. LABHASETWAR, *USA* Yasuhiko TABATA, *Japan* *Members:* Chong H. AHN, *USA* François A. AUGER, *Canada* Mario A. BARBOSA, *Portugal* Joke A. BOUWSTRA, *The Netherlands* Ranieri CANCEDDA, *Italy* Yilin CAO, *P.R. China* Emo CHIELLINI, *Italy* Fu-Zhai CUI, *China* Abraham J. (Avi) DOMB, *Israel* Tom DUERIG, *USA* Barrie C. FINNIN, *Australia* Aaron FLEISCHMAN, *USA* Hiroyuki FUJITA, *Japan* Israel GANNOT, *Israel* Martin GIJS, *Switzerland* Jöns HILBORN, *Sweden* J. Zach HILT, *USA* Esmaiel JABBARI, *USA* Kazunori KATAOKA, *Japan* Soo Hyun KIM, *Korea* Robert S. LANGER, *USA* Sang Yup LEE, *Korea* Vincent H.L. LEE, *Hong Kong* Andreas LENDLEIN, *Germany* Kam W. LEONG, *USA* Jean LUPRANO, *Switzerland* Yuji MATSUURA, *Japan* Antonios G. MIKOS, *USA* Joachim H. NAGEL, *Germany* Hani E. NAGUIB, *Canada* Robert M. NEREM, *USA* Teruo OKANO, *Japan* Kinam PARK, *USA* Michael L. REED, *USA* Rui L. REIS, *Portugal* Cyrus R. SAFINYA, *USA* Aliasger K. SALEM, *USA* Renshi SAWADA, *Japan* Yuichi SUGIYAMA, *Japan* Qing-Ping SUN, *Hong Kong* Hsing-Wen SUNG, *Taiwan, ROC* Takahisa TAGUCHI, *Japan* Toshiyuki TAKAGI, *Japan* Yoshinobu TAKAKURA, *Japan* Swee-Hin TEOH, *Singapore* Vladimir P. TORCHILIN, *USA* Ian TUCKER, *New Zealand* Minoru UEDA, *Japan* Arto URTTI, *Finland* Pankaj VADGAMA, *UK* Herbert F. VOIGT, *USA* Stephen WONG, *USA* Nobuhiko YUI, *Japan*

SYMPOSIUM E - Mining Smartness from Nature

Symposium Co-Chairs: Yoseph BAR-COHEN, *USA* Luigi FORTUNA, *Italy* Toshio FUKUDA, *Japan* Stanislav GORB, *Germany* *Programme Chair:* Salvatore GRAZIANI, *Italy* *Special Session E-6 Coordinator:* Paolo ARENA, *Italy* *Members:* Takuzo AIDA, *Japan* Tomonari AKAMATSU, *Japan* Robert ALLEN, *UK* Eduard ARZT, *Germany* Antonio BICCHI, *Italy* Olga A. BOGATYREVA, *UK* Vincent BULONE, *Sweden* Manuel ELICES, *Spain* Charlie ELLINGTON, *UK* Frank FISH, *USA* Madan M. GUPTA, *Canada* Tsutomu HASEGAWA, *Japan* Shuji HASHIMOTO, *Japan* Gerd HIRZINGER, *Germany* Shigeyuki HOSOE, *Japan* Robert D. HOWE, *USA* Auke Jan IJSPEERT, *Switzerland* Boyko ILIEV, *Sweden* Ray JARVIS, *Australia* Christopher H.M. JENKINS, *USA* George JERONIMIDIS, *UK* Isao KARUBE, *Japan* Branko KATALINIC, *Austria* Keiji KAWACHI, *Japan* Patrick KELLER, *France* William M. KIER, *USA* Kwang J. KIM, *USA* Hidenori KIMURA, *Japan* Kunihito KOUMOTO, *Japan* George V. LAUDER, *USA* Pedro U. LIMA, *Portugal* Stephen MANN, *UK* Chengde MAO, *USA* Constantinos MAVROIDIS, *USA* Chris MELHUISH, *UK* Bradley NELSON, *Switzerland* Toribio Fernandez OTERO, *Spain* Gerald POLLACK, *USA* Luquan REN, *P.R. China* Kenneth SANDHAGE, *USA* Yoshiyuki SANKAI, *Japan* Mehmet SARIKAYA, *USA* Nadrian C. SEEMAN, *USA* Friedrich C. SIMMEL, *Germany* James SIMMONS, *USA* Shigeru SUNADA, *Japan* Susumu TACHI, *Japan* Jun TANI, *Japan* Dimitris P. TSAKIRIS, *Greece* Johan VAN LEEUWEN, *The Netherlands* Steven VOGEL, *USA* Juyang WENG, *USA* Peter XU, *New Zealand* Tetsuya YAGI, *Japan* Takeo YAMAGUCHI, *Japan* Hao YAN, *USA* Di ZHANG, *P.R. China*

FOCUSED SESSION A-10 - State-of-the-art Research and Application of SMAs Technologies

Session Coordinator: Stefano BESSEGHINI, *Italy* *Members:* Ferdinando AURICCHIO, *Italy* Kaushik BHATTACHARYA, *USA* Fabio CASCIATI, *Italy* Eduard CESARI, *Spain* Volodymyr A. CHERNENKO, *Ukraine* Alexander B. FREIDIN, *Russia* Simo-Pekka V. HANNULA, *Finland* Tomoyuki KAKESHITA, *Japan* Ibrahim KARAMAN, *USA* Yoichi KISHI, *Japan* Yuji MATSUZAKI, *Japan* Shuichi MIYAZAKI, *Japan* Peter MÜLLNER, *USA* Patrick OCHIN, *France* Bogdan RANIECKI, *Poland* Xiaobing REN, *Japan* Avadh B. SAXENA, *USA* Huseyin SEHITOGLU, *USA* Petr SITTNER, *Czech Republic* Jan VAN HUMBEECK, *Belgium* Shyi-Kaan WU, *Taiwan* L'Hocine YAHIA, *Canada* Yufeng ZHENG, *China*

FOCUSED SESSION A-11 - Smart Textiles

Session Coordinator: PARADISO Rita, *Italy* *Members:* Ray H. BAUGHMAN, *USA* Annalisa BONFIGLIO, *Italy* Tushar K. GHOSH, *USA* Augustin GRILLET, *Belgium* Juan HINESTROZA, *USA* Sundaresan JAYARAMAN, *USA* Nigel JOHNSON, *Australia* Masatsugu KIKODE, *Japan* Joonseok KOH, *South Korea* Vladan KONCAR, *France* Paul LUKOWICZ, *Germany* Heikki MATTILA, *Finland* Eric McADAMS, *UK* Andreas NEUDECK, *Germany* Ning PAN, *USA* Markus RÜEDI, *Switzerland* George K. STYLIOS, *UK* Xiaoming TAO, *Hong Kong* Gerhard TRÖSTER, *Switzerland* Lieva VAN LANGENHOVE, *Belgium* Xungai WANG, *Australia*

FOCUSED SESSION A-12 - Artificial Muscle Actuators using Electroactive Polymers

Session Coordinators: Yoseph BAR-COHEN, *USA* and Federico CARPI, *Italy* *Members:* Patrick A. ANQUETIL, *USA* Kinji ASAKA, *Japan* Vaclav BOUDA, *Czekia* Paul CALVERT, *USA* Piero CHIARELLI, *Italy* Hyouk Ryeol CHOI, *Korea* Liming DAI, *USA* Toshihiro HIRAI, *Japan* Edwin W.H. JAGER, *Sweden* Keiichi KANETO, *Japan* Jaehwan KIM, *Korea* Guggi KOFOD, *Germany* Gabor M. KOVACS, *Switzerland* Marc MADOU, *USA* Yoshihiro NAKABO, *Japan* Jae-Do NAM, Korea Hoon Cheol PARK, Korea Qibing PEI, USA Ronald PELRINE, USA Steen SKAARUP, Denmark Peter SOMMER-LARSEN, Denmark Satoshi TADOKORO, Japan Minoru TAYA, WA, USA Yaowen YANG, Singapore

SESSIONS TIMETABLE

Sunday June 8

11.00-13.00 15.00-19.30
REGISTRATION
Congress Centre "La Perla Ionica"
Via Unni 10
Acireale, Catania, Italy

15.00-19.00
POSTER MOUNTING

Monday June 9

Morning: 9.30-11.00

Opening Session
Welcome Addresses
Plenary Lectures (PL-01 - PL-02)

11.50-13.00

Session A-1	(A-1:IL01-IL02)
Session A-10.1	(A-10.1:IL01-IL02)
Session A-11.1	(A-11.1:IL01-IL02)
Session B-1.2	(B-1.2:IL01-IL02)
Session C	(C-KL01 - C-KL02)
Session D-1	(D-1:IL01-IL02)
Session E-1.1	(E-1.1:IL01-IL02)

13.00-14.45
"Buffet Lunch"

8.30-11.30
13.30-15.00
POSTER MOUNTING

Afternoon: 15.00-18.30

Session A-1	(A-1:IL03-L06) (A-1:IL07-L10)
Session A-2	(A-2:IL01-L05)
Session A-9	(A-9:IL01-L03)
Session A-10	(A-10.1:IL03-L07)
Session A-11.1	(A-11.1:IL03-IL05) (A-11.1:IL06-L08)
Session B-1.1	(B-1.1:IL01-IL03)
Session B-1.3	(B-1.3:IL01-IL02)
Session C-1	(C-1:IL01-IL03) (C-1:IL04-IL05)
Session C-3	(C-3:L01-L04) (C-3:L05-L08)
Session D-1	(D-1:IL03-L06) (D-1:IL07-L09)
Session D-7	(D-7:IL01-L02)
Session E-1.1	(E-1.1:IL03-L06)
Session E-1.2	(E-1.2:IL01-L03)
Session E-3.1	(E-3.1:L01-IL04) (E-3.1:L05-L07)

19.00-20.00
"Get-Together" (Welcome Drinks)

Tuesday June 10

Morning: 9.00-13.00

Session A-1	(A-1:IL11-L15) (A.1:IL16-L19)
Session A-2	(A-2:IL06-L09)
Session A-9	(A-9:IL04-L08)
Session A-10.3	(A-10.3:IL01-L06)
Session A-10.4	(A-10.4:IL01-L03)
Session A-12.1	(A-12.1:IL01-IL04) (A-12.1:IL05-L07)
Session B-1.1	(B-1.1:L04-L09)
Session B-1.2	(B-1.2:IL03-IL05)
Session B-2.2	(B-2.2:L05-L07)
Session B-2.3	(B-2.3:IL01-IL04)
Session C-1	(C-1:L06-L11) (C-1:L12-L14)
Session C-2	(C-2:IL01-IL04) (C-2:IL05-IL06)
Session D-1	(D-1:IL10-L14)
Session D-2	(D-2:IL01-L04)
Session E-1.1	(E-1.1:IL07-IL10)
Session E-1.3	(E-1.3:IL01-L04)

13.00-14.45
"Buffet Lunch"

Afternoon: 15.00-18.30

Session A-3	(A-3:IL01-L03)
Session A-5	(A-5:IL01-L04)
Session A-6	(A-6:L01-L05)
Session A-9	(A-9:IL09-L13)
Session A-10.2	(A-10.2:IL01-L05)
Session A-10.3	(A-10.3:IL07-L10)
Session B-1.2	(B-1.2:L06-L08)
Session B-1.3	(B-1.3:IL03-L07)
Session B-2.1	(B-2.1:L06-L08) (B-2.1:L09-L10)
Session C-1	(C-1:IL15-IL18) (C-1:L19-L21)
Session C-2	(C-2:L07-L12)
Session C-4	(C-4:IL01-IL02)
Session D-2	(D-2:IL05-L09) (D-2:IL10-L12)
Session E-1.3	(E-1.3:IL05-L07)
Session E-2.1	(E-2.1:IL01-L05)
Session E-6	(E-6:IL01-IL04) (E-6:IL05-IL06)

POSTER DISCUSSION: 18.30 - 19.45

Red Label Posters
Posters whose last number is an even number, i.e. A-4:P**10**

Wednesday June 11

Morning: 9.00-13.00

Session A-5	(A-5:IL05-L10) (A.5:IL11-L13)
Session A-8	(A-8:IL01-L04) (A.8:IL05-L08)
Session A-10.2	(A-10.2:IL06-L10) (A-10.2:IL11-IL13)
Session A-11.3	(A-11.3:IL01-L05B) (A-11.3:IL06-L08)
Session A-12.1	(A-12.1:IL14-L16) (A-12.2:IL01-L05)

Session B-1.4	(B-1.4:IL01-IL04)
Session B-1.5	(B-1.5:IL01-IL02)
Session C-3	(C-3:L09-L14) (C-3:IL15-IL16)
Session C-4	(C-4:IL03-IL06) (C-4:L07-L11)
Session D-3	(D-3:IL01-IL04) (D-3:IL05-L07)
Session E-2.1	(E-2.1:IL06-L11)
Session E-3.2	(E-3.2:IL01-L04)

"Buffet Lunch": 13.00-14.45

15.00-20.00
Tour to Taormina
Bus departure from Congress Center at 15.00

Thursday June 12

Morning: 9.00-13.00

Session A-4	(A-4:IL01-L03)
Session A-5	(A-5:L14-L19)
Session A-8	(A-8:IL09-IL12) (A-8:IL13-L16)
Session A-10.4	(A-10.4:IL04-L06)
Session A-10.5	(A-10.5:IL01-L06)
Session A-11.2	(A-11.2:IL01-L03)
Session A-11.3	(A-11.3:IL09-L13)
Session A-12.2	(A-12.2:IL06-L10) (A-12.2:IL11-L13)
Session B-1.5	(B-1.5:IL03-L06)
Session B-2.1	(B-2.1:IL01-IL03)
Session C-3	(C-3:L17-L22) (C-3:IL23-IL24)
Session C-5	(C-5:IL01-IL04) (C-5:L05-IL08)
Session D-4	(D-4:IL01-IL03)
Session D-5	(D-5:IL01-L05)
Session E-4.2	(E-4.2:IL01-L05)
Session E-4.3	(E-4.3:IL01-IL03)
Session E-6	(E-6:IL07-IL10) (E-6:IL11-IL12)

"Buffet Lunch": 13.00-14.00

Afternoon: 15.00-18.30

Session A-4	(A-4:IL04-L06)
Session A-7	(A-7:IL01-L05)
Session A-8	(A-8:IL17-L20) (A.8:L21-L23)
Session A-10.5	(A-10.5:IL07-L11)
Session A-11.1	(A-11.1:IL09-L12) (A-11.1:IL13-L15)
Session A-12.1	(A-12.1:IL08-L10) (A-12.1:IL11-L13)
Session B-2.1	(B-2.1:IL04-IL05)
Session B-2.2	(B-2.2:IL02-IL04)
Session C-3	(C-3:L25-IL29) (C-3:IL30-IL31)
Session C-4	(C-4:IL12-L16) (C-4:L17-L19)
Session D-4	(D-4:IL01-L06)
Session D-6	(D-6:IL01-L05)
Session D-7	(D-7:IL03-L05)
Session E-2.2	(E-2.2:IL01-L03)
Session E-4.1	(E-4.1:IL01-IL03)
Session E-6	(E-6:IL13-IL16) (E-6:IL17-IL18)

POSTER DISCUSSION: 18.30 - 19.45

Green Label Posters
Posters whose last number is an odd number, i.e. A-2:P0**7**

Friday June 13

Morning: 9.00-13.00

Session A-7	(A-7:IL06-L09) (A.7:IL10-L13)
Session A-8	(A-8:IL24-L28) (A.8:IL29-L32)
Session A-10.1	(A-10.1:IL08-L12) (A-10.1:IL13-L17)
Session A-11.2	(A-11.2:IL04-L07) (A-11.2:IL08-L11)
Session A-12.3	(A-12.3:IL01-L04) (A-12.3:IL05-IL06)
Session B-3	(B-3:IL01-L05) (B-3:IL06-IL09)
Session C-4	(C-4:L20-L26) (C-4:IL27-IL28)
Session C-5	(C-5:L09-IL14) (C-5:IL15-IL16)
Session D-5	(D-5:IL06-L11)
Session D-7	(D-7:IL06-IL08)
Session E-4.2	(E-4.2:IL06-L09)
Session E-5	(E-5:IL01-IL04)

"Buffet Lunch": 13.00-14.45

16.30-19.30
Escursion to Etna Volcano

20.30-23.30
Conference Dinner

SCIENTIFIC PROGRAMME

3rd International Conference

SMART MATERIALS, STRUCTURES AND SYSTEMS

OPENING SESSION

Welcome Addresses

Plenary Lectures

PL-01 **Development of a Practical Monitoring System of Urban Infrastructure toward Mitigation of Disaster and Accidents**
Y. FUJINO, The University of Tokyo, Tokyo, Japan

PL-02 **EAP Actuators for Biomimetic Technologies with Humanlike Robots as one of the Ultimate Challenges**
Y. BAR-COHEN, Jet Propulsion Lab., California Institute of Technology, Pasadena, CA, USA

SYMPOSIUM A

Smart Materials and Micro/ Nanosystems

Session A-1

Ferroelectric, Piezoelectric, Electrostrictive and Magnetostrictive Single Crystal and Polycrystalline Ceramics and Metal Alloys

A-1: IL01 **Mesoscopic Theory of Ferroelectric and Ferromagnetic Active Materials**
JIANGYU LI, University of Washington, Seattle, WA, USA

A-1: IL02 **Piezoelectric Composites: Properties and Applications**
C. BOWEN, University of Bath, Bath, UK

A-1: IL03 **Lead-free Piezoelectrics for Transducer Applications**
A. SAFARI, Rutgers University, Piscataway, NJ, USA

A-1: IL04 **Phase Transition Behavior of Anti-ferroelectric Ceramics and its Applications**
ZHUO XU, YUJUN FENG, XI YAO, Xi'an Jiaotong University, Xi'an, China

A-1: L05 **High-performance Lead-free Barium Titanate Piezoelectric Ceramics**
T. KARAKI, K. YAN, M. ADACHI, Toyama Prefectural University, Imizu, Toyama, Japan

A-1: L06 **Electromechanical Response of Large Strain Ferroelectric Actuators**
D. SHILO, A. MENDELOVICH, H. DREZNER, Technion, Haifa, Israel

A-1: IL07 **Enhanced Piezoelectricity in Relaxor Ferroelectrics: a Phenomenological Approach**
J.-M. LIU, L.-F. WANG, Nanjing University, Nanjing, China

A-1: L08 **Energy Harvesting from Thermal Energy: the Use of Ferroelectric-Ferroelectric Transition**
G. SEBALD, S. PRUVOST, A. KHODAYARI, D. GUYOMAR, INSA-Lyon, Villeurbanne, France

A-1: L09 **An Enhancement of Magnetic Properties of Cobalt Ferrite by Magnetic Annealing**
N.B. EKREEM, S.A. MAZLAN, T. PRESCOTT, A.G. OLABI, A. RAFFERTY, Dublin City University, Dublin, Ireland

A-1: L10 **Difference in Ferroelectric Aging Between A-site and B-site Acceptor Doped $BaTiO_3$ Crystals**
LIXUE ZHANG, Xi'an Jiaotong University, Xi'an, China; XIAOBING REN, National Institute for Materials Science, Tsukuba, Ibaraki, Japan

A-1: IL11 **Constitutive Modeling for Design and Control of Magnetostrictive Galfenol Devices**
M. DAPINO, The Ohio State University, Columbus, OH, USA

A-1: IL12 **New Multifunctional Materials Based on $BiFeO_3$**
A.J. BELL, University of Leeds, Leeds, UK

A-1: IL13 **Novel Magnetostrictive Nanobars for High Performance Biological Detection**
Z.-Y. CHENG, SUIQIONG LI, KEWEI ZHANG, LILING FU, BYRAN CHIN, Auburn University, Auburn, AL, USA

A-1: IL14 **Multilayered Magnetic Films and Fibers for Electromagnetic Sensor Technology**
L.V. PANINA, D.P. MAKHNOVSKIY, University of Plymouth, Plymouth, UK

A-1: L15 **Numerical Advances on a Hyperbolic-parabolic Problem Arising in Magnetoelasticity**
V. VALENTE, F. PISTELLA, IAC-CNR, Rome, Italy

A-1: IL16 **Piezoelectric Properties of Sputtered AlN Thin Films and their Application**
U. SCHMID, Saarland University, Saarbruecken, Saarland, Germany

A-1: IL17 **Piezoelectric Ceramic Films for MEMS Applications**
JING-FENG LI, ZHI-XIANG ZHU, YING XU, FENG-PING LAI, Tsinghua University, Beijing, P.R. China

A-1: L18 **The Use of Different Fibres Geometry and Sintering Conditions for AFC Structures**
F. CLEMENS, M.R. ISMAEL, J. HEIBER, R. PARADIES, T. GRAULE, EMPA, Duebendorf, Switzerland; M. PIECHOWIAK, L. KOZIELSK, D. CZEKAJ, University of Silesia, Sosnowiec, Poland

A-1: L19 **Production of 3Y-PSZ Powders by Co-precipitation and Milling**
E. FURLANI, E. ANEGGI, S. MASCHIO, University of Udine, Udine, Italy

Session A-2
Stimuli Responsive Polymers and Gels

A-2: IL01 **Ionic Polymeric Conductor Nano Composites (IPCNC's) as Distributed Nanosensors and Nanoactuators**
M. SHAHINPOOR, University of Maine, Orono, ME, USA

A-2: IL02 **Colloids and Beyond**
J. BIBETTE, ESPCI, Paris, France

A-2: L03 **Design and Optimization of IPMC for Biomedical Applications**
CHOONGHEE JO, H.E. NAGUIB, R.H. KWON, University of Toronto, Toronto, Ontario, Canada

A-2: L04 **Magnet-polymer Composites as Artificial Muscle Transducers**
R.V. RAMANUJAN, N.Q. VINH, Nanyang Technological University, Singapore

A-2: L05 **Static and Dynamic Electroresponse of Triblock Polymer Gel Actuator**
T.I. VALADAS LEITAO, S.J. PICKEN, E. MENDES, Delft University of Technology, Delft, The Netherlands

A-2: IL06 **Intelligent Gels - Artificial Muscles as Soft and Wet Biomachines -**
YOSHIHITO OSADA, RIKEN, Saitama, Japan

A-2: L07 **Characterization of Free Volume Changes in Nanoscale Hydrogel Films under External Perturbations through Single Molecule Probe Tracking**
L.C.C. ELLIOTT, University of Illinois, Urbana-Champaign, IL, USA; P.W. BOHN, University of Notre-Dame, Notre-Dame, IN, USA

A-2: L08 **Photoresponsive Liquid Crystal Elastomers with Large Deformation and Fast Movement**
T.J. WHITE[1, 2], V.P. TONDIGLIA[1, 3], H. KOERNER[1, 4], S. SERAK[5], V. GROZHIK[5], N. TABIRIYAN[5], R.A. VAIA[1], T.J. BUNNING[5], [1]Air Force Research Lab., WPAFB, OH, USA; [2] General Dynamics IT, WPAFB, OH, USA; [3] Science Applications International Corp.; [4] University of Dayton; [5]BEAM Company

A-2: L09 **Tailor-made Segmented Polymers: Versatile Smart Materials**
S. VERBRUGGHE, F. DU PREZ, Ghent University, Ghent, Belgium

Session A-3
Shape Memory Polymers

A-3: IL01 **Thermally Reversible Shape Memory Nano-structures of Novel Brush Polymers**
MOONHOR REE, SANGWOO JIN, JINHWAN YOON, KYUYOUNG HEO, KYEONG SIK JIN, YECHEOL RHO, BYUNGCHEOL AHN, Pohang University of Science & Technology, Pohang, Korea; YOUNG BAEK KIM, PaiChai University, Korea

A-3: L02 **Synthesis and Evaluation of a New Class of Shape Memory Materials based on Multi-Block Copolymers**
S. D'HOLLANDER, F.E. DU PREZ, Ghent University, Ghent, Belgium

A-3: L03 **Micromechanical Modelling of Shape Memory Polymers**
M. BÖL, S. REESE, Braunschweig University of Technology, Germany

Session A-4
Electrorheological and Magnetorheological Fluids

A-4: IL01 **Ferrofluids and Magnetorheological Fluids**
L. VEKAS, University Politehnica Timisoara, Timisoara, Romania

A-4: IL02 **Development of Novel Electrorheological Fluids Featuring High Yield Stress**
KUNQUAN LU, RONG SHEN, XUEZHAO WANG, YANG LU, GANG SUN, ZEXIAN CAO, JIXING LIU, Institute of Physics, Chinese Academy of Sciences, Beijing, China

A-4: L03 **The Apparent Viscosity Model of Rheological Fluids**
M.L. SZARY, Southern Illinois University, Carbondale, IL, USA

A-4: IL04 **Fundamental Modelling and Application of Electrorheological and Magnetorheological Fluids**
R. STANWAY, University of Sheffield, Sheffield, UK

A-4: L05 **Tensile Behaviour of a Magnetorheological Fluid under Different Initial Gap Sizes and Tensile Speeds**
S.A. MAZLAN, A.G. OLABI, Dublin City University, Dublin, Ireland

A-4: L06 **Attenuation of Structural Vibration through Magnetorheologic Fluid due to Seismic Excitation**
C. MESQUITA NETO, D.D. BUENO, C.R. MARQUI, R.B. SANTOS, V. LOPES Jr., UNESP, Ilha Solteira, Sao Paulo, Brazil

Session A-5
Smart Multifunctional Materials and Composites

A-5: IL01 **Composite Coatings with Phase Change Materials for Thermal Actuation**
L. STAPPERS, J. FRANSAER, A. MALFLIET, Katholieke Universiteit Leuven, Heverlee, Belgium

A-5: L02 **Morphing Composite Wing Section**
A. PIRRERA, P.M. WEAVER, University of Bristol, Bristol, UK

A-5: L03 **Quantitative, in-situ Material Characterization of Viscoelastic Unidirectional Composite Laminates using Lamb Waves**
M. CALOMFIRESCU, University of Bremen, Bremen, Germany

A-5: L04 **Self Healing of Mechanical Damage in Metallic Materials**
NORIO SHINYA, National Institute for Materials Science, Tsukuba, Ibaraki, Japan

A-5: IL05 **Novel Engineered Nanotube-based Piezoelectric Polymeric Composites with Tunable Mechanical Properties**
A. SALEHI-KHOJIN, M.R. HOSSEINI, N. JALILI, Clemson University, Clemson, SC, USA

A-5: IL06 **A New Design Concept for Multifunctional Structural Material Systems Based on Composites**
HIROSHI ASANUMA, Chiba University, Chiba, Japan

A-5: L07 **Multistable Textured Shell Structures**
A.D. NORMAN, K.A. SEFFEN, S.D. GUEST, University of Cambridge, Cambridge, UK

A-5: L08 **Friction Coefficients and Wear Rates of MoS_2/Cu, BN/Cu Composites**
TAKASHI HASHIMOTO, H. KOHRI, A. YUMOTO, I. SHIOTA, Kogakuin University, Hachioji, Tokyo, Japan

A-5: L09 **Continuous Damage Monitoring and Self Repairing in CFRP/SMA Smart Hybrid Composites**
J. JELLID, M. SALVIA, Ecole Centrale de Lyon, Ecully, France

A-5: L10 **Development of Stress and Temperature Sensitive Microwires**
A. ZHUKOV[1, 2], V. ZHUKOVA[1, 2], J. GONZALEZ[1], J.M. BLANCO[1], [1]Universidad del Pais Vasco, San Sebastian, Spain; [2]TAMAG Iberica S.L., San Sebastian, Spain

A-5: IL11 **Development of Smart Composite Actuator/ Sensor Material and Device using the Multi-ferroic Effect**
YASUBUMI FURUYA, TEIKO OKAZAKI, Hirosaki University, Japan

A-5: L12 **Fabrication of Electrode for Thermoelectric Oxide Materials**
H. KOHRI, I. SHIOTA, Kogakuin University, Hachioji, Tokyo, Japan; M. KATO, I.J. OHSUGI, Salesian Polytechnic, Machida, Tokyo, Japan

A-5: L13 **Electromechanical Response of Piezoelectric Composite Materials**
T.A. VENKATESH, Stony Brook University, Stony Brook, NY, USA

A-5: L14 **Thin-film Multiferroic Nanocomposites in the System $LuMnO_3$-$Pr_{0.7}Sr_{0.3}MnO_3$**
O.Yu. GORBENKO, A.R. AKBASHEV, A.R. KAUL, Lomonosov Moscow State University, Moscow, Russia

A-5: IL15 **Tunable and Self-sensing Microwave Composite Materials Incorporating Ferromagnetic Wires**
D.P. MAKHNOVSKIY, University of Plymouth, Devon, UK

A-5: L16 **Termoelectric Properties of High Density Sintered $Ca_3Co_2O_6$**
T. UESUGI, H. KOHRI, I. SHIOTA, Kogakuin University, Hachioji, Tokyo, Japan; M. KATO, I.J. OHSUGI, Salesio Polytechnic, Machida, Tokyo, Japan

A-5: L17 **Ceramic-polymer 0-3 Composites with High Dielectric Permittivity**
XIAOBING SHAN, PEIXUAN WU, CANRAN XU, Z.-Y. CHENG, Auburn University, Auburn, AL, USA

A-5: IL18 **Room Temperature Magnetic-semiconductors in Modified Iron Titanates: their Multifunctional Nature and Potential Applications**
R.K. PANDEY, P. PADMINI, P. KALE, J. DOU, R. SCHAD, University of Alabama, Tuscaloosa, AL, USA; R. WILKINS, Prairie View A&M University, Prairie View, TX, USA; W. GEERTS, Texas State University, San Marcos, TX, USA

A-5: L19 **Synthesis of a Multiferroic Cobalt Ferrite-barium Titanate Nanocomposite**
V. CORRAL-FLORES, D. BUENO-BAQUES, R.F. ZIOLO, Centro de Investigacion en Quimica Aplicada, Saltillo, Mexico

Session A-6
Hybrid Active Materials Systems

A-6: L01 **Multiscale Molecular Modeling of Hybrid Organic-inorganic Nanocomposites of Type I and II**
M. FERMEGLIA, P. POSOCCO, S. PRICL, University of Trieste, Trieste, Italy; M. MALY, Academy of Sciences of the Czech Rep., Prague, Czech Republic

A-6: L02 **Structural Design of Smart Organic-inorganic Hybrid Membranes from Quaternized Chitosan and Alkoxysilane**
TADASHI URAGAMI, Kansai University, Suita, Osaka, Japan

A-6: L03 **Ultrafilm Formation by Gamma-ray Induced Polymerization in Surfactant Template on Solid Surface**
T. PONGPRAYOON, King Mongkut's Institute of Technology North Bangkok, Bangkok, Thailand

A-6: L04 **Bistable Buckled Beam: Modelling and Piezoelectric Actuation**
C. MAURINI[1], J. POUGET[1], S. VIDOLI[2], [1]Université Pierre et Marie Curie, Paris, France; [2]University "La Sapienza", Rome, Italy

A-6: L05 **Design of Smart Material Based Actuators for Bistable Structures**
P. CAZOTTES[1, 2], A. FERNANDES[1], J. POUGET[1], M. HAFEZ[2], [1]Université Pierre et Marie Curie, Paris, France; [2]Sensory Interfaces Laboratory, Fontenay-aux-Roses, France

Session A-7
Smart Nanocomposites and Nanomaterials

A-7: IL01 **Designing Soft Nanocarbons by Programmed Assembly**
TAKUZO AIDA, TAKANORI FUKUSHIMA, The University of Tokyo, Tokyo, Japan

A-7: L02 **Tailoring the Long Range Order of Block Copolymer Based Nanomasks on Flat Substrates**
R.A. PUGLISI, P. LA FATA, S. LOMBARDO, CNR-IMM, Catania, Italy

A-7: L03 **High Internal Phase Emulsion Foams (HIPE) Filled with Organo-bentonite: Hybrid Organic-inorganic Porous Clay Heterostructures (HPCH) Versus Organo-modified Bentonite (MOD)**
P. PAKEYANGKOON, R. MAGARAPHAN, P. MALAKUL, M. NITHITANAKUL, Chulalongkorn University, Bangkok, Thailand

A-7: L04 **The Effect of Transition Metal on the Thermal Conductivity of Filled Epoxy Resin**
K. WATTANAKUL, H. MANUSPIYA, T. CHAISUWAN, N. YANUMET, H. ISHIDA, Petroleum and Petrochemical College, Chulalongkorn, Bangkok, Thailand

A-7: L05 **Coupling Effects in Two-phase Magnetoelectric Composites**
D. BUENO-BAQUES, V. CORRAL-FLORES, R.F. ZIOLO, Centro de Investigacion en Quimica Aplicada, Saltillo Coah, Mexico

A-7: IL06 **Towards Nanoscale Self-healing**
N.R. SOTTOS, B.J. BLAISZIK, P.V. BRAUN, A. JACKSON, S.R. WHITE, University of Illinois, Urbana-Champaign, IL, USA

A-7: IL07 **Polymer-based High-k Composites**
CE-WEN NAN, YANG SHEN, CHENG YANG, Tsinghua University, Beijing, China

A-7: L08 **Microstructure and Morphology of $Ba_{0.5}Sr_{0.5}TiO_3$-P (VDF-CTFE) Nanocomposites**
PEI-XUAN WU, XIAOBING SHAN, Z.-Y. CHENG, Auburn University, Auburn, AL, USA

A-7: L09 **Environment Adaptive Friction Reducing Nanocomposites with Remaining Life Sensor Capability for Aerospace Applications**
A.A. VOEVODIN, C. MURATORE, J.G. JONES, Wright-Patterson Air Force Base, Dayton, OH, USA

A-7: IL10 **From Mixed Monolayer Coated Nanoparticles to Nano-polymers**
F. STELLACCI, MIT, Cambridge, MA, USA

A-7: IL11 **Polymer-metal Nanocomposites for Functional Applications**
F. FAUPEL, V. ZAPOROJTCHENKO, H. GREVE, U. SCHÜRMANN, H. TAKELE, C. HANISCH, V.S.K. CHAKRAVADHANULA, A. KULKARNI, Christian-Albrechts University at Kiel, Kiel, Germany; A. GERBER, E. QUANDT, Inorganic Functional Materials; R. PODSCHUN, University Hospital Schleswig-Holstein, Kiel, Germany

A-7: L12 **Nano/Micro-sized $Ge_2Sb_2Te_5$ Structures Formed (100)/(111) Si Substrate by Electrical Pulse Induced Evaporation Method**
H.J. KIM, S.K. CHOI, Korea Advanced Institute of Science and Technology, Daejeon, Korea

A-7: L13 **Functionalized Nanostructures with Noble Metals Shells and Magnetic Cores**
O. PANA, R. TURCU, M.L. SORAN, A. NAN, National Institute R&D for Isotopic and Molecular Technologies, Cluj-Napoca, Romania; O. CHAUVET, C. PAYEN, E. GAUTRON, Institute of Materials Jean Rouxel, Nantes, France

Session A-8
MEMS / NEMS

A-8: IL01 **CNT Based Sensors**
C. HIEROLD, A. JUNGEN, L. DURRER, T. HELBLING, ETH Zurich, Zurich, Switzerland

A-8: L02 **Design and Fabrication of a Piezoelectric MEMS AC Current Sensor**
E.S. LELAND, P.K. WRIGHT, R.M. WHITE, University of California, Berkeley, CA, USA

A-8: IL03 **MEMS Fabrication Based on Epitaxial Piezoelectric Thin Films on Silicon**
S. GARIGLIO, N. STUCKI, J.-M. TRISCONE, University of Geneva, Switzerland; D. ISARAKORN, D. BRIAND, N.F. DE ROOIJ, University of Neuchatel, Switzerland; S.H. BAEK, C.-B. EOM, University of Wisconsin, Madison, USA; J.W. Reiner, C.H. AHN, Yale University, USA

A-8: L04 **Model and Simulation of Resonant MEMS Based on High-electron Mobility Transistor**
I. KHMYROVA, University of Aizu, Aizu-Wakamatsu City, Japan

A-8: IL05 **A Review of Test Structures for Characterising Microelectronic and MEMS Technology**
A.J. WALTON, S. SMITH, University of Edinburgh, Edinburgh, UK

A-8: L06 **Friction Drive Simulation of a SAW Motor with Slider Surface Texture Variation**
MINORU KURIBAYASHI KUROSAWA, TAKASHI SHIGEMATSU, Tokyo Institute of Technology, Yokohama, Japan

A-8: L07 **MEMS Rotational Thermal Actuator for High Force and Large Displacement**
L.J. CURRANO, D. GEE, W. CHURAMAN, M. DUBEY, P. AMIRTHARAJ, U.S. Army Research Lab., Adelphi, MD, USA; M. YU, B. BALACHANDRAN, University of Maryland, College Park, MD, USA

A-8: L08 **Vibration of Initially Stressed Micro and Nanobeams**
C.M. WANG, National University of Singapore, Kent Ridge, Singapore

A-8: IL09 **Anthropod Flow Sensing: when MEMS Design Learns from Physical Ecology**
J. CASAS, Université de Tours, Tours, France; G. KRIJNEN, University of Twente, Enschede, The Netherlands

A-8: IL10 **Nanofluidic Membranes and Filters for Biosample Preparation**
PAN MAO, MIT, Cambridge, MA, USA; M. STERN, Lehigh University, Bethlehem, PA, USA; C. BATISTA, Roxbury Community College, Roxbury Crossing, MA, USA; JEONGHOON LEE, YONG-AK SONG, JONGYOON HAN, MIT, Cambridge, MA, USA

A-8: IL11 **Electronically Controlled Micro- and Nanosystems for Biosensing and Interfacing Biology**
J. VÖRÖS, ETH Zurich, Zurich, Switzerland

A-8: IL12 **Dynamic Fluidic Microarray for Biological Cell Analysis**
SHOJI TAKEUCHI, The University of Tokyo, Tokyo, Japan

A-8: IL13 **Performance Limits of MEMS Inertial Sensors**
F. AYAZI, Georgia Institute of Technology, Atlanta, GA, USA

A-8: L14 **Design and Fabrication of a Two Hot Arms Thermal Micro-actuator with Integrated Micro Tweezers**
A.B. ALAMIN DOW, University of Bremen, Bremen, Germany; K. IVANOVA, T. IVANOV, I. RANGELOW, Technical University of Ilmenau, Ilmenau, Germany

A-8: L15 **Three-axis MEMS Threshold Accelerometer Switch for Enhanced Power Conservation**
W. CHURAMAN, L.J. CURRANO, D. GEE, U.S. Army Research Laboratory, Adelphi, MD, USA

A-8: L16 **Piezoelectric MEMS Actuators for Bio-inspired Micro-robotic Applications**
J. PULSKAMP, K. OLDHAM*, R. POLCAWICH, M. DUBEY, P. AMIRTHARAJ, United States Army Research Laboratory, Adelphi, MD, USA; *University of Michigan, Ann Arbor, MI, USA

A-8: IL17 **Combinatorial Studies and Scaling in Smart Metallic Thin Film Materials**
R. SPOLENAK, ETH Zurich, Zurich, Switzerland

A-8: L18 **A Novel Fuel Cell Electrode Structure with Porous Pt Layer Formed on a Si Substrate**
MASANORI HAYASE, T. FUJII, J.G.A. BRITO-NETO, Tokyo University of Science, Noda, Chiba, Japan

A-8: L19 **Silicon on Ceramics with Nanostructured Interface**
M. FISCHER, H. BARTSCH DE TORRES, M. MACH, M. HOFFMANN, J. MÜLLER, Ilmenau Technical University, Ilmenau, Germany

A-8: L20 **Electromechanical Behavior of Single and Multiwall Carbon Nanotubes**
A. PANTANO, Università degli Studi di Palermo, Italy; D.M. PARKS, M.C. BOYCE, MIT, USA; M. NARDELLI, North Carolina State University, USA

A-8: L21 **RF MEMS Devices Using PZT Thin Films**
R.G. POLCAWICH, J. PULSKAMP, D. JUDY, M. DUBEY, P. AMIRTHARAJ, US Army Research Laboratory, Adelphi, MD, USA

A-8: L22 **Superelastic and Shape Memory Micro-nano Devices**
J. SAN JUAN[1, 2], M.L. NO[1], C.A. SCHUH[2], [1]Universidad del Pais Vasco, Bilbao, Spain; [2]MIT, Cambridge, MA, USA

A-8: L23 **Development of Micro-gas-valve Using Bi-morph Magnetostrictive Actuators**
TEIKO OKAZAKI, YASUBUMI FURUYA, Hirosaki University, Hirosaki, Japan; CHIHIRO SAITO, NOBUO IMAIZUMI, Namiki Precision Jewel, Tokyo, Japan

A-8: IL24 **The Promise and Potential of Nano and Micro Systems for Military Applications**
J.M. PELLEGRINO, Director, Sensors and Electron Devices Directorate, US Army Research Lab., Adelphi, MD, USA

A-8: L25 **Fully Integrated Bridge-type Anemometer in LTCC-based Microfluidic Systems**
H. BARTSCH DE TORRES, C. RENSCH, T. THELEMANN, M. FISCHER, J. MÜLLER, M. HOFFMANN, TU Ilmenau, Germany

A-8: L26 **Improvement of MEMS Vibrational Energy Scavenging Devices**
L.M. MILLER, N.C. EMLEY, P. SHAFER, P.K. WRIGHT, University of California, Berkeley, CA, USA

A-8: L27 **A Study on a 3D Electroosmotic Micromixer**
A.Z. KOUZANI, K. KHOSHMANESH, S. NAHAVANDI, J. KANWAR, Deakin University, Geelong, VIC, Australia

A-8: L28 **3C-silicon Carbide Hetero-epitaxial Films for Sensors Fabrication**
R. ANZALONE, G. D'ARRIGO, F. LA VIA, IMM-CNR, Catania, Italy; G. CONDORELLI, M. MAUCERI, Epitaxial Techn. Center, Catania, Italy; G. FOTI, University of Catania, Catania, Italy

A-8: IL29 **RF MEMS Products and Applications**
D. HYMAN,XCOM Wireless Inc., Signal Hill, CA, USA

A-8: L30 **Porous Metal Frameworks on Silicon Substrates**
J.G.A. BRITO NETO, TAKU MATSUZAKA, YOSUKE SAITO, MASANORI HAYASE, Tokyo University of Science, Noda, Chiba, Japan

A-8: L32 **Atomic MEMS Enabled by Glass Blowing on a Wafer Level**
E.J. EKLUND, A.M. SHKEL, University of California, Irvine, CA, USA

SPECIAL SESSION A-9
Recent Development in Electrical Writable Organic Memory Devices

A-9: IL01 **Organic Memory Devices from C60 and Insulating Polymers**
M. CHHOWALLA, Rutgers University, Piscataway, NJ, USA

A-9: L02 **All Organic Non-volatile Flash-like Thin Film Transistor Memory on Flexible Plastic Substrate**
ZINGWAY PEI, National Chung Hsing University, Taichung, Taiwan, ROC; C.C. CHANG, J. HOU, Y.J. CHAN, Industrial Technology Research Institute, Hsinchu, Taiwan, ROC

A-9: L03 **Organic Radical Memory: A Rewritable Memory Device**
H. NISHIDE, Waseda University, Tokyo, Japan

A-9: IL04 **Nanoparticles for Charge Storage**
D. TSOUKALAS, National Technical University of Athens, Zografou, Greece; M.C. PETTY, Durham University, Durham, UK

A-9: IL05 **Bistable Electrical Switching and Memory Performance in Conjugated and Non-conjugated Polymers**
Q.D. LING, C.X. ZHU, D.S.H. CHAN, K.G. NEOH, E.T. KANG, National University of Singapore, Kent Ridge, Singapore

A-9: L06 **Polarity-switching Organic Radical Memory**
K. OYAIZU, Y. YONEKUTA, K. SUSUKI, K. HONDA, H. NISHIDE, Waseda University, Tokyo, Japan

A-9: L07 **Organic Thin Films for Ultrahigh Density Information Storage**
YANLIN SONG, YONGQIANG WEN, GUIYUAN JIANG, WENFANG YUAN, Institute of Chemistry, Chinese Academy of Sciences, Beijing, China

A-9: L08 **Floating Charge Storage Centers for Non-volatile Organic Memory Applications Enabled by In-situ Synthesis of Gold Nanoparticles in a Self-assembled Block Copolymer**
W.L. LEONG, P.S. LEE, T.P. CHEN, S.G. MHAISALKAR, Nanyang Technological University of Singapore, Singapore

A-9: IL09 **Recent Progress on Organic/Polymer Memory Devices and their Stacking Structure**
YANG YANG, University of California, Los Angeles, CA, USA

A-9: L10 **Non-volatile Memory Devices Based on Diphenyl Bithiophenes**
E.V. CANESI, C. BERTARELLI, A. BIANCO, M. CAIRONI, G. DASSA, D. FAZZI, D. NATALI, M. SAMPIETRO, G. ZERBI, Politecnico di Milano, Milano, Italy

A-9: L11 **Resistive Electrical Switching of Nonvolatile Memories from Electrodeposited Copper Tetracyanoquinodimethane (CuTCNQ)**
R. MÜLLER, A. KATZENMEYER, O. ROUAULT, L. GOUX, D.J. WOUTERS, J. GENOE, P. HEREMANS, IMEC v.z.w., Leuven, Belgium

A-9: L12 **Effect of Various Electrode Materials in Non-volatile Memory Device using Poly(3,4-ethylenedioxythiophene): Poly(styrenesulfonate) (PEDOT:PSS) Thin Films**
H. HA, J. LEE, M. KIM, O. KIM, Pohang University of Science and Technology, Pohang, Republic of Korea

A-9: L13 **Organic Memory Devices with Negative Differential Resistance and their Physical Interpretation**
J. BARAL, H.S. MAJUMDAR, R. ÖSTERBACKA, Åbo Akademi University, Turku, Finland; A. LAIHO, J. RUOKOLAINEN, R. RAS, O. IKKALA, Helsinki University of Technology, Helsinki, Finland

FOCUSED SESSION A-10

State-of-the-art Research and Application of SMAs Technologies

Session A-10.1
Materials

A-10.1: IL01 **New Ferromagnetic Shape Memory Systems: Research Lines and Unresolved Problems**
E. CESARI, M. CORRO', S. KUSTOV, F. MASDEU, C. PICORNELL, J. PONS, R. SANTAMARTA, C. SEGUI', Universitat de les Illes Balears, Palma de Mallorca, Spain; W. MAZIARZ, J. DUTKIEWICZ, Institute of Metallurgy and Materials Science, Krakow, Poland; Y.I. CHUMLYAKOV, Siberian Physical-Technical Institute, Tomsk, Russia

A-10.1: IL02 **Recent Developments of Magnetic SMA**
O. SÖDERBERG, I. AALTIO, YANLING GE, XUWEN LIU, S.-P. HANNULA, Helsinki University of Technology, TKK, Finland

A-10.1: IL03 **Combinatorial Search of Shape Memory Alloys and Other Smart Materials**
ICHIRO TAKEUCHI, University of Maryland, College Park, MD, USA

A-10.1: IL04 **New (Quaternary) Compositions of Ni-Mn-Ga-based Magnetic Shape Memory Alloys**
I. GLAVATSKYY, I. URUBKOV, D. FEDOTOVA, N. GLAVATSKA, Institute for Metal Physics, National Academy of Sciences of Ukraine, Kiev, Ukraine

A-10.1: L05 **Magnetic Field-induced Phase Transformation in NiMnCoIn Shape Memory Alloys**
I. KARAMAN, H.E. KARACA, B. BASARAN, Texas A&M University, College Station, TX, USA; Y.I. CHUMLYAKOV, Siberian Physical-Technical Institute, Tomsk, Russia; H.J. MAIER, University of Paderborn, Paderborn, Germany

A-10.1: L06 **Texture Analysis and Magnetic Properties of Ni-Mn-Ga Magnetic Shape Memory Thin Films Deposited using Pulsed Laser Deposition**
YUEPENG ZHANG, G.A. BOTTON, M. NIEWCZAS, R.A. HUGHES, J.S. PRESTON, McMaster University, Hamilton, Ontario, Canada

A-10.1: L07 **Development of Cu-Al-Mn Based Shape Memory Alloys: Phase Stability and Microstructural Control**
TOSHIHIRO OMORI, Y. SUTOU, R. KAINUMA, K. ISHIDA, Tohoku University, Sendai, Japan

A-10.1: IL08 **Metamagnetic Shape Memory in the NiMnIn and NiMnSn Based Heusler-type Alloys**
RYOSUKE KAINUMA, W. ITO, K. OIKAWA, K. ISHIDA, Tohoku University, Sendai, Japan

A-10.1: IL09 **Glassy Martensite**
XIAOBING REN, National Institute for Materials Science, Tsukuba, Japan

A-10.1: L10 **Co-doping: Tuning Ni-Mn-Ga for Actuator Application?**
K. ROLFS, N. ALLIOUANE, R. SCHNEIDER, Hahn-Meitner-Institut, Berlin, Germany; A. MECKLENBURG, J.-M. GULDBAKKE, TU Braunschweig, Germany; M. CHMIELUS, Boise State University, Boise, USA; J. BROWN, Institut Laue-Langevin, Grenoble, France

A-10.1: L11 **Work Output Enhancement of Ferromagnetic Shape Memory Micro Actuators**
Y. GANOR, D. SHILO, Technion, Haifa, Israel

A-10.1: L12 **High Energy Milling and Hot Extrusion of Equiatomic NiTi Shape Memory Alloy**
L.C. DA SILVA, IPEN, Sao Paulo, Brazil; F. AMBROZIO FILHO, UNIFEI, Sao Bernardo, Brazil; M.C.A. DA SILVA, Universidade de Sao Paulo, Brazil

A-10.1: IL13 **Ni-free Ti-base Shape Memory Alloys**
SHUICHI MIYAZAKI, HEE YOUNG KIM, University of Tsukuba, Tsukuba, Ibaraki, Japan

A-10.1: IL14 **Elastic Properties of Shape Memory Alloys**
M. LANDA[1], P. SEDLAK[1, 2], H. SEINER[1, 2], L. BICANOVA[1, 2], L. HELLER[1], P. SITTNER[3], V. NOVAK[3], [1]Institute of Thermomechanics, ASCR, Prague, Czech Republic; [2]Czech Technical University, Prague, Czech Republic; [3]Institute of Physics, ASCR, Prague, Czech Republic

A-10.1: L15 **Combinatorial Development of Conventional and Ferromagnetic Ternary SMA Thin Film Systems**
A. LUDWIG, R. ZARNETTA, S. HAMANN, A. SAVAN, S. THIENHAUS, Ruhr-Universität Bochum, Germany

A-10.1: L16 **Development of Cu-Al-Mn Based Shape Memory Alloys: Application to Medical Devices**
Y. SUTOU, T. OMORI, R. KAINUMA, Y. YAMAGUCHI, K. ISHIDA, Tohoku University, Sendai, Japan

A-10.1: L17 **Non-monotonic Two-way Shape Memory in Titanium Nickelide**
A. RAZOV, A. NOVOSELSKY, M. YUSUPOV, Saint-Petersburg State University, Saint-Petersburg, Russia

Session A-10.2
Phase Transformation and Microstructure

A-10.2: IL01 **In Situ Experimental Methods for Characterization of Deformation Processes in SMAs**
P. SITTNER, J. PILCH, Institute of Physics; P. LUKAS, Nuclear Physics Institute; M. LANDA, Institute of Thermomechanics, ASCR v.v.i., Prague, Czech Republic

A-10.2: L02 **Effect of the Loading History on Shape Memory Alloy Transformation Temperatures**
G. FAIELLA, University of Naples, Naples, Italy; V. ANTONUCCI, M. GIORDANO, Institute for Composite and Biomedical Materials (CNR), Naples, Italy; F. DAGHIA, E. VIOLA, University of Bologna, Bologna, Italy

A-10.2: L03 **Elemental Interfaces and Displacive Phase Transformations**
V. PAIDAR, Institute of Physics, ASCR v.v.i., Prague, Czech Republic

A-10.2: L04 **Shape Memory Behavior in Some (Ti,Zr,Hf)50(Ni,Cu)50 Alloys Elaborated by Glass Devitrification**
V. KOLOMYTSEV, M. BABANLY, A. PASKO, A SHPAK, T. SYCH, Institute of Metal Physics NASU, Kiev, Ukraine; P. OCHIN, ICMPE CNRS, Vitry sur Seine, France; Ph. VERMAUT, R. PORTIER, ENSCP, Paris, France; E. CESARI, UIB, Palma de Mallorca, Spain

A-10.2: L05 **Monte-Carlo Simulation of the Phase Transformation and the Magnetocaloric Properties in Ni-Mn-Ga Shape Memory Alloys**
V.D. BUCHELNIKOV, S.V. TASKAEV, V.V. SOKOLOVSKIY, Chelyabinsk State University, Chelyabinsk, Russia

A-10.2: IL06 **Rearrangement of Crystallographic Domains Driven by Magnetic Field in Ferromagnetic Shape Memory Alloy and Antiferromagnetic Oxide**
TOMOYUKI KAKESHITA, Osaka University, Suita, Japan

A-10.2: IL07 **Texture Development in Ni-Ti Thin Films**
F.M. BRAZ FERNANDES, R.M.S. MARTINS, N. SCHELL*, K.K. MAHESH, R.J.C. SILVA, CENIMAT, Monte de Caparica, Portugal; *GKSS, Geesthacht, Germany

A-10.2: L08 **In-situ Studies of Ferroelastic Domain Textures in NiTi Shape Memory Alloys under Load**
W.W. SCHMAHL, M. HASAN, C. MERKEL, LMU Munich, Germany; M. HÖLZEL, FRM-II, Munich and TU Darmstadt, Germany; J. FRENZEL, S. GOLLERTHAN, M. WAGNER, G. EGGELER, Ruhr-University Bochum, Germany

A-10.2: L09 **Ostwald Ripening on Nanoscale**
V.M. BURLAKOV, University of Oxford, Oxford, UK, and Institute for Spectroscopy, Russian Academy of Sciences, Troitsk, Moscow Region, Russia

A-10.2: L10 **A Study on Phase Transformation in NiTi Shape Memory Alloy Films Deposited Using Heated Target**
K.P. MOHANCHANDRA, G.P. CARMAN, University of California, Los Angeles, CA, USA

A-10.2: IL11 **Instability of the B2-type Structure and Second Order-like Incommensurate-commensurate Transformation in Iron-doped Ti-Ni Alloys**
TAKASHI FUKUDA, TOMOYUKI KAKESHITA, Osaka University, Suita, Japan

A-10.2: IL12 **Two-way Memory Effect in NiTi Shape Memory Alloys**
YONG LIU, Nanyang Technological University, Singapore

A-10.2: IL13 **Magneto-microstructural Characterization of Magnetic Shape Memory Alloys**
H.J. MAIER, D. NIKLASCH, University of Paderborn, Paderborn, Germany; I. KARAMAN, Texas A&M University, College Station, TX, USA

Session A-10.3
Engineering

A-10.3: IL01 **Shape-memory Alloys: Effective 3D Modelling, Computational Aspects and Micro-device Design**
F. AURICCHIO, A. REALI, Università degli Studi di Pavia, Italy

A-10.3: IL02 **Engineering Aspects of Shape Memory Thin Film Actuators and Sensors**
M. KOHL, Forschungszentrum Karlsruhe, Karlsruhe, Germany

A-10.3: L03 **Transformation / Deformation Behavior and its Constitutive Equation for Ti-Ni-Cu Shape Memory Alloy**
Y. TAKEDA, TAKE R&D, Japan; T. YAMAMOTO, T. SAKUMA, Oita University, Oita, Japan

A-10.3: L04 **Effect of Microvoids on Plasticity in NiTi-alloy**
J.S. OLSEN, Z.L. ZHANG, Norwegian University of Science and Technology, Trondheim, Norway; C. VAN DER EIJK, Sintef, Trondheim, Norway

A-10.3: L05 **Mechanical Behavior of Spherical Segments from TiNi Shape Memory Alloys**
M.A. KHUSAINOV, S.A. POPOV, O.V. LETENKOV, Yaroslav the Wise Novgorod State University, Veliky Novgorod, Russia; V.A. ANDREEV, A.B. BONDAREV, Industrial Centre "MATEKS", Moscow, Russia

A-10.3: L06 **Effect of Heat Transfer Parameters on the Actuation Characteristics of Shape Memory Alloy Wires**
A. KHANDELWAL, V.R. BURAVALLA, S. SUNDARRAJ, General Motors R&D, Bangalore, India

A-10.3: IL07 **Experimental Characterization of NiTi SMAs Thermomechanical Behaviour Using Temperature and Strain Full-field Measurements**
P. SCHLOSSER[1, 2], D. FAVIER[1], H. LOUCHE[2], L. ORGEAS[1], [1]Universities Grenoble, France; [2]SYMME, Polytech' Savoie, France

A-10.3: L08 **Thermomechanical Behavior of Tubular NiTi Textile Structures**
L. HELLER, D. VOKOUN, P. SITTNER, Academy of Sciences of the Czech Republic, Prague, Czech Republic

A-10.3: L09 **Functional Properties of Ti-Ni-based Shape Memory Alloys**
I. KHMELEVSKAYA, S. PROKOSHKIN, I. TRUBITSYNA, A. KOROTITSKIY, M. BELOUSOV, Moscow Institute of Steel and Alloys, Moscow, Russia; V. BRAILOVSKI, Ecole de Technologie Superieure, Montreal, Canada; S. DOBATKIN, Baikov Institute of Metallurgy and Material Science, Moscow, Russia; E. TATYANIN, Institute for High Pressure Physics, Troitsk, Russia; V. STOLYAROV, E. PROKOFIEV, Institute of Physics of Advanced Materials, Ufa, Russia

A-10.3: L10 **Influence of the Temperature and the Way of the Preliminary Plastic Deformation in Austenitic State of the Shape Memory Effect in Ti - 50.0 at. % Ni**
N. RESNINA, S. BELYAEV, I. UCHAEVA, Saint-Petersburg State University, Saint-Petersburg, Russia

Session A-10.4
Composites & Coatings

A-10.4: IL01 **Submicronic Technology of Ferromagnetic Martensites: Scientific and Applied Aspects**
V.A. CHERNENKO, Institute of Magnetism, Kiev, Ukraine

A-10.4: L02 **Ni2MnGa - Polymer Composites for Active Vibration Dampening**
O. GUTFLEISCH, N. SCHEERBAUM, J. LIU, D. HINZ, L. SCHULTZ, IFW Dresden, Dresden, Germany

A-10.4: L03 **Selection of Polymer Matrices for SMA Composite through DSC Analysis**
D. CLAUSI, D. REYNAERTS, J. PEIRS, J. VAN HUMBEECK, Katholieke Universiteit Leuven, Leuven, Belgium

A-10.4: IL04 **Ferro Magnetic Shape Memory Alloy Composites**
R.C. O'HANDLEY[a], R. TECHAPIESANCHAROENKIJ[a], J. FEUCHTWANGER[a, b], J. KOSTAMO[a, c], B. PETERSON[a, d], M. MAHENDRAN[a, e], M. RICHARD[a, f], S.M. ALLEN[f], [a]MIT, Cambridge, MA, USA; [b]University of Basque Country, Bilbao, Spain; [c]Helsinki University of Technology, Espoo, Finland; [d]NSWC, West Bethesda, MD, USA; [e]Thiagarajar College of Engineering, Madurai, India; [f]Richard Stockton College, Pomona, NJ, USA

A-10.4: L05 **Surfactant Modified Nickel-manganese-gallium Powder and Silicone Composites**
R.S. UNDERHILL, K.A. STEVENS, Defence R&D Canada - Atlantic, Dartmouth, Nova Scotia, Canada

A-10.4: L06 **Thermomechanical Modelling and Experimental Testing of a Shape Memory Alloy Hybrid Composite Plate**
F. DAGHIA, University of Bologna, Bologna, Italy; E. SACCO, University of Cassino, Cassino, Italy; G. FAIELLA, University of Naples, Naples, Italy; V. ANTONUCCI, M. GIORDANO, CNR, Naples, Italy

Session A-10.5
Applications

A-10.5: IL01 **SMA Fatigue in Civil Engineering Applications**
F. CASCIATI[1], L. FARAVELLI[1], A. ISALGUE[2], F. MARTORELL[2], H. SOUL[3], V. TORRA[2], [1]University of Pavia, Pavia, Italy; [2]Polytechnic University of Catalonia, Barcelona, Spain; [3]Centro Atomico Bariloche e Instituto Balseiro, S.C. de Bariloche, Argentina

A-10.5: IL02 **Combining Functionalities of Shape Memory Alloys with Advantages through High Added-value Networks: the European Project AVALON**
A. MONERO, S. CAROSIO, D'Appolonia SpA, Genoa, Italy; S.V. REHM, T. FISCHER, DITF-MR, Denkendorf, Germany

A-10.5: L03 **Control Characteristics of Shape Memory Alloy Actuator Using Resistance Feedback Control Method**
YUJI TAKEDA, TAKE R&D, Kasukabe, Japan; TAKEI YAMAMOTO, TOSHIO SAKUMA, Oita University, Japan

A-10.5: L04 **Creep Free Bolted Flanged Connections on a Basis of High Temperature Shape Memory Alloys**
A.I. EFREMOV, CryoMechanics, LLC, Albuquerque, NM, USA

A-10.5: L05 **Generation of Smart Structures on the Basis of in-situ Configuration of Shape Memory Alloys**
S. LANGBEIN, E.G. WELP, Ruhr-University Bochum, Bochum, Germany

A-10.5: L06 **The Mechanical Response of Shape Memory Alloys under a Rapid Heating Pulse**
S. WALLACH, D. SHILO, Technion, Israel

A-10.5: IL07 **Superelastic NiTi Thin Films for Medical Applications**
E. QUANDT, C. ZAMPONI, CAU Kiel, Kiel, Germany

A-10.5: IL08 **Finite Element Analysis on Contemporary Superelastic TiNi Endodontic Files**
E.W. ZHANG, YU-FENG ZHENG, Peking University, Beijing, China

A-10.5: L09 **Smartflex® NiTi Wires for Shape Memory Actuators**
A. CODA, F. BUTERA, G. VERGANI, L. FUMAGALLI, L.L. TOIA, SAES Getters SpA, Lainate (MI), Italy

A-10.5: L10 **Structuring of Sputtered Superelastic NiTi Thin Films Tubes by Photolithography and Wet-etching**
R. LIMA DE MIRANDA, C. ZAMPONI, E. QUANDT, University of Kiel, Kiel, Germany

A-10.5: L11 **Structural Coupled Analysis of Shape Control of a Beam Using Shape Memory Alloy Wires**
A. KHANDELWAL, V.R. BURAVALLA, P.D. MANGALGIRI, Motors R&D, Bangalore, India

FOCUSED SESSION A-11
Smart Textiles

Session A-11.1
Adaptive / Active Textiles

A-11.1: IL01 **Nanotechnology for Functional Textiles**
H. PLANCK, T. STEGMAIER, M. DAUNER, Institute for Textile and Process Engineering, Denkendorf, Germany

A-11.1: IL02 **Optical Responses of Nano- and Micro-structured Polymeric Photonic Fibers for Flexible Intelligent Structures**
XIAOMING TAO, The Hong Kong Polytechnic University, Kowloon, Hong Kong

A-11.1: IL03 **Fabrication and Multifunctional Applications of Carbon Nanotube Yarns and Self-woven Transparent Sheets**
R.H. BAUGHMAN, S. FANG, M. ZHANG, A.A. ZAKHIDOV, M. KOZLOV, A.E. ALIEV, University of Texas, Dallas, TX, USA; K.R. ATKINSON, CSIRO Textile & Fibre Technology, Belmont, Victoria, Australia; T. MIRFAKHRAI, J.D.W. MADDEN, University of British Columbia, Vancouver, Canada; P. GALVAN-GARCIA, M.I. ROMERO, Scottish Rite Hospital, Dallas, TX, USA

A-11.1: IL04 **The Investigation about the Shape Memory Behavior of Wool**
JINLIAN HU, ZHENG-E DONG, YAN LIU, YIJUN LIU, The Hong Kong Polytechnic University, Kowloon, Hong Kong

A-11.1: IL05 **Production, Properties and Applications of Spun Carbon Nanotube Yarns and Knitted Tubes**
K.R. ATKINSON, S.R. HUTTON, C. SKOURTIS, CSIRO Textile & Fibre Technology, Geelong, Victoria, Australia

A-11.1: IL06 **Polymeric Nanofibers Reinforced with Multi-wall Carbon Nanotubes for Applications Ranging from Filters to Tissue Scaffolds**
R.E. GORGA, L.I. CLARKE, NC State University, Raleigh, NC, USA

A-11.1: L07 **Photochromic Wool Fabrics with Enhanced Durability and Photochromic Performance**
TONG LIN, TONG CHENG, REX BRADY, XUNGAI WANG, Deakin University, Geelong, Vic, Australia

A-11.1: L08 **Designing with a Responsive Colour Palette: The Development of Colour and Pattern Changing Products**
S. ROBERTSON, R.M. CHRISTIE, S.E. TAYLOR, Heriot-Watt University, Galashiels, UK

A-11.1: IL09 **Investigating SMART Membranes and Coatings by In Situ Synthesis of Iron Oxide Nanoparticles in PVA Hydro Gels**
G.K. STYLIOS, T. WAN, Heriot-Watt University, Galashiels, UK

A-11.1: IL10 **Lotus-effect®: Biomimetic Super-hydrophobic Surfaces and their Application**
M. SPAETH, W. BARTHLOTT, University of Bonn, Bonn, Germany

A-11.1: IL11 **Characteristics of Carbon-polymer Composite System Prepared by Gelation Crystallization from Solution and the Application to Clothing Materials**
MASARU MATSUO, S. ISAJI, Q. CHEN, Nara Women's University, Nara, Japan

A-11.1: L12 **Gold Coated Yarn for Medical Applications**
A. SCHWARZ, J. HAKUZIMANA, E. GASANA, P. WESTBROEK, L. VAN LANGENHOVE, Ghent University, Zwijnaarde (Gent), Belgium

A-11.1: IL13 **Thin-film Silicon for E-textiles**
S. WAGNER, Princeton University, Princeton, NJ, USA

A-11.1: IL14 **Fabrication and Characterization of High Surface Electric Conductivity Nanowebs for Intelligent Textile Systems**
TAE JIN KANG, BYUNG WOOK AHN, YONG-SEUNG CHI, CHUNG HEE PARK, Seoul National University, Seoul, Korea

A-11.1: L15 **Actuator Fibers for Textiles**
TUSHAR GHOSH, North Carolina State University, Raleigh, NC, USA

Session A-11.2
E-textiles

A-11.2: IL01 **Organic Based Sensors in Smart Fabrics for Point-of-care Patient Health Monitoring in Real Time**
TAEKSOO JI, SOYOUN JUNG, J.K. ABRAHAM, V.K. VARADAN, University of Arkansas, Fayetteville, AR, USA

A-11.2: L02 **Printed Textile Antennas for Off-body Communication**
C. HERTLEER, L. VAN LANGENHOVE, H. ROGIER, Ghent University, Zwijnaarde (Gent), Belgium

A-11.2: L03 **A Smarter Life**
M. PEDLEY, D. EMERY, SmartLife Technologies, Manchester, UK; T. DIAS, P. GAYDECKI, University of Manchester, Manchester, UK

A-11.2: IL04 **Conductive Structures on Textiles by Simple Dyeing of Textiles with Solutions of Carbon Nanotubes and Conductive Polymers**
I. SCHMID, University of Stuttgart, Stuttgart, Germany; E. FRANK, ITCF, Denkendorf, Germany

A-11.2: IL05 **Current Solutions for Integration of Electronic into Garments**
I. LOCHER, Sefar AG, Heiden, Switzerland

A-11.2: IL06 **STELLA - STretchable ELectronics for Large Area Applications - A New Technology for Smart Textiles**
C. KLATT, Freudenberg Forschungsdiense KG, Weinheim, Germany

A-11.2: L07 **Future Intelligent Textiles**
T. DIAS, The University of Manchester, Manchester, UK

A-11.2: IL08 **Embroidered Interconnections and Encapsulation for Electronics Applications in Textiles**
T. LINZ, C. DILS, R. VIEROTH, Fraunhofer IZM, Berlin, Germany

A-11.2: IL09 **Woven Logic with Electrochemical Transistors**
O. INGANAS, M. HAMEDI, R. FORCHHEIMER, Linköpings Universitet, Linköping, Sweden

A-11.2: L10 **Strains Sensors and Chemical Sensors Printed onto Textiles**
P. CALVERT, P. PATRA, D. DUGGAL, A. AGRAWAL, University of Massachusetts, N. Dartmouth, MA, USA

A-11.2: L11 **Photonic Textiles**
L. VAN PIETERSON, R. BHATTACHARYA, K. KRIEGE, O. VAN LOON, P. BOUTEN, Philips Research Labs, Eindhoven, The Netherlands

Session A-11.3
Functionality and Applications

A-11.3: IL01 **Fiber Sensory Bioengineering**
YI LI, The Hong Kong Polytechnic University, Kowloon, Hong Kong

A-11.3: IL02 **E-textiles Applications in Emergency Scenarios**
R. PARADISO, Smartex Srl, Prato, Italy

A-11.3: L03 **Person Detection with Nanomaterial-based Rubber Foam for Cars and E-homes**
U. HERBERTH, Ingenieurbuero Herberth, Endingen, Germany

A-11.3: L04 **Photo-catalysis of Red Wine Stains using Titanium Dioxide Sol-gel Coatings on Wool Fabrics**
C.J. HURREN, P.G. COOKSON, X.G. WANG, Deakin University, Geelong, Vic, Australia

A-11.3: L05 **Modification of Cotton to Improve its Water Repellency and Thermal Stability**
C. PISUNTORNSUG, N. YANUMET, Chulalongkorn University, Bangkok, Thailand; E.A. O'Rear, The University of Oklahoma, Norman, OK, USA

A-11.3: L05B **Optimization of the Electrospray Process by PIV Analysis in Nanostructured Membranes Preparation**
D. PLISZKA[1], S. SUNDARRAJAN[1], A. JAWOREK[2], A. KRUPA[2], M. LACKOWSKI[2], S. RAMAKRISHNA[1], [1]National University of Singapore, Singapore; [2]Polish Academy of Sciences, Gdansk, Poland

A-11.3: IL06 **Haptic Sensing in Intelligent Textile Development**
H. MEINANDER, Tampere University of Technology, Tampere, Finland

A-11.3: L07 **Carbon-based Textiles as Gas Diffusion Layers (GDL) for Polymer Fuel Cells**
P. GALLO STAMPINO, D. BRIVIO, G. DOTELLI, Politecnico di Milano, Milano, Italy; P. FRACAS, Saati Group Spa, Appiano Gentile, Como, Italy; P. GRASSINI, 3SEAL SpA, Legnano, Milano, Italy

A-11.3: L08 **Enzymatic Functionalisation of Proteinous and Chitosan Fibres with BioPhenolics and their Bioactive Properties**
F. SOUSA[1], S. JUS[1, 2], G.M. GUEBITZ [2], V. KOKOL[1], [1]University of Maribor, Slovenia; [2]Graz University of Technology, Austria

A-11.3: IL09 **Medical Sensor Applications of Photonic Textiles**
M. ROTHMAIER, M. CAMENZIND, B. SELM, EMPA, St. Gallen, Switzerland

A-11.3: IL10 **Smart Textile Embedding Optical Fibre Sensors for Healthcare Monitoring during MRI**
F. NARBONNEAU, D. KINET, Multitel, Mons, Belgium; F. PIROTTE, Centexbel, Brussels, Belgium; R. SHISHOO, Shishoo Consulting, Askim, Sweden; J.L. WEBER,Tamtelesanté, Aix en Provence, France; J. DE JONCKHEERE, P. CHAUD, ITM CHRU de Lille, Lille, France; J. WITT, M. SCHUKAR, M. WENDT, N. DANTAN, K. KREBBER, BAM, Kiel, Germany; T. THIEL, AOS, Dresden, Germany; G. KUKA, Fiberware, Mittweida, Germany; S. WEBER, TUM, Munchen, Germany; A. DEPRÉ, Elasta, Kortrijk, Belgium

A-11.3: IL11 **Position and Motion Sensing for Sport, Entertainment and Rehabilitation**
R.J.N. HELMER, CSIRO Textile and Fibre Technology, Belmont, Vic, Australia

A-11.3: IL12 **Design for Ageing Well: Improving the Quality of Life for the Aging Population Using a Technology Enabled Garment System**
J. McCANN, University of Wales, Newport, UK

A-11.3: L13 **Monitoring and Control System of Discomfort in Disability, Bed Rest People and Surgical Patients**
M.A.F. CARVALHO, F.B.N. FERREIRA, H. CARVALHO, J.G. ROCHA, L.B. MARTINS, University of Minho, Guimaraes, Portugal; J.A. SANTOS, University of Minho, Braga, Portugal

FOCUSED SESSION A-12

A joint Session with Symposium E

Artificial Muscle Actuators Using Electroactive Polymers

Session A-12.1
Materials

A-12.1: IL01 **Electroactive Nanocomposites**
QIMING ZHANG, CHENG HUANG, SHENG LI, MINREN LIN, BRET NEESE, YONG WANG, The Pennsylvania State University, University Park, USA

A-12.1: IL02 **Novel Polymer Composites as Promising Smart Materials**
M. ZRINYI, Budapest University of Technology and Economics, Budapest, Hungary

A-12.1: IL03 **Synthesis and Characterization of IPNs for Electrochemical Actuators**
F. VIDAL[1], C. PLESSE[1], G. PALAPRAT[1], J. JUGER[1], J. CITERIN[2], A. KHEDDAR[2], C. CHEVROT[1], D. TEYSSIÉ[1], [1] Université de Cergy-Pontoise, Cergy-Pontoise, France; [2] Université d'Evry, France

A-12.1: IL04 **Synthesis of Conducting Polymers in Ionic Liquids**
M. FORSYTH, J.M. PRINGLE, D.R. McFARLANE, Monash University, Clayton, Vic, Australia

A-12.1: IL05 **Electroactive Polymer - Overcoming the Obstacles to Real Products**
C. DUNCHEON, Artificial Muscle, Inc., Menlo Park, CA, USA

A-12.1: IL06 **Fault-tolerant Dielectric Elastomers**
QIBING PEI, WEI YUAN, University of California, Los Angeles, CA, USA

A-12.1: IL07 **Electroactive Polymer Actuator with Ionic-liquid-based Bucky Gel**
KINJI ASAKA, KEN MUKAI, ICHIRO TAKEUCHI, TAKUSHI SUGINO, KENJI KIYOHARA, NAOHIRO TERASAWA, AIST, Osaka, Japan

A-12.1: IL08 **Metal Ion Implanted Compliant Electrodes in Dielectric Electroactive Polymer (EAP) Membranes**
P. DUBOIS, S. ROSSET, M. NIKLAUS, H. SHEA, EPFL, Lausanne, Switzerland; M. DADRAS, University of Neuchâtel, Switzerland

A-12.1: IL09 **Conducting Polymer Actuators: Rate Limits**
J.D. MADDEN, CHI-WAH E. FOK, T. SHOA, T. MIRFAKHRAI, University of British Columbia, Vancouver, BC, Canada

A-12.1: L10 **Potential Electroactive Actuators Based on Liquid Crystalline Elastomers and Ferroelectric Nano-particles**
V. DOMENICI[1, 2], B. ZUPANCIC[1], M. REMSKAR[1], V. V. LAGUTA[3], C.A. VERACINI[2], B. ZALAR[1], [1]Jozef Stefan Institute, Ljubljana, Slovenja; [2] Dipartimento di Chimica e Chimica Industriale, Pisa, Italy; [3] Ukrainian Acad. Sci., Inst. Problems Mat. Sci., Kiev, Ukraine

A-12.1: IL11 **Tough Hydrogel - Learn from Nature**
JIAN PING GONG, Hokkaido University, Sapporo, Japan

A-12.1: L12 **Enhancing the Electro-mechanical Response of Maxwell Stress Actuators**
G. GALLONE, G. LEVITA, F. CARPI, F. GALANTINI, D. DE ROSSI, University of Pisa, Pisa, Italy

A-12.1: L13 **Conducting IPN Fibers: A New Design for Linear Actuation in Open Air**
C. PLESSE, F. VIDAL, D. TEYSSIE, C. CHEVROT, University of Cergy-Pontoise, Cergy-Pontoise, France

A-12.1: IL14 **Ionic Polymer-metal Composite Paint**
KWANG J. KIM, IL-SEOK PARK, University of Nevada, Reno, NV, USA

A-12.1: IL15 **Electromechanical Actuation of Carbon Nanotube Yarns**
T. MIRFAKHRAI[1], JIYOUNG OH[2], M. KOZLOV[2], S. FANG[2], M. ZHANG[2], R.H. BAUGHMAN[2], G. ALICI[3], G. SPINKS[3], J.D MADDEN[1], [1] University of British Columbia, Vancouver, Canada; [2] University of Texas at Dallas, Richardson, TX, USA; [3] University of Wollongong, NSW, Australia

A-12.1: L16 **Electrode Reactions in Cu-Pt Coated Nafion® Actuators**
U. JOHANSON, U. MÄEORG, D. BRANDELL, A. PUNNING, M. KRUUSMAA, A. AABLOO, Tartu University, Tartu, Estonia

Session A-12.2
Analysis, Physical Mechanisms and Characterization

A-12.2: IL01 **Finite-elasticity Models of Actuation**
G. KOFOD, University of Potsdam, Potsdam, Germany

A-12.2: IL02 **Models for High-strain Deformation of Dielectric Elastomer Actuators**
R.M. McMEEKING, S.M.A. JIMENEZ, University of California, Santa Barbara, CA, USA

A-12.2: L03 **A Model for a Thermally Induced Polymer Coil-to-globule Transition**
I.C. SANCHEZ, D. SIMMONS, University of Texas, Austin, TX, USA

A-12.2: L04 **Monte Carlo Simulation of Electroactive Polymer Actuators**
KENJI KIYOHARA, KINJI ASAKA, AIST, Ikeda, Osaka, Japan

A-12.2: L05 **Dielectric Elastomer Actuators as Elements of Active Vibration Control Systems**
F.G. PAPASPIRIDIS, I.A. ANTONIADIS, National Technical University of Athens, Athens, Greece

A-12.2: IL06 **Electrochemomechanical Actuators Touching and Sensing both, Physical and Chemical Ambient**
T.F. OTERO, Universidad Politécnica de Cartagena, Cartagena, Spain

A-12.2: IL07 **Work Behavior of Polypyrrole Artificial Muscles**
KEIICHI KANETO, HIROTAKA SUEMATSU, KENTARO YAMATO, Kyushu Institute of Technology, Kitakyushu, Japan

A-12.2: L08 **The Coupled Energy - Density Function of Dielectric Composites in Finite Deformation Elasticity**
G. DeBOTTON[1], M. GEI[2], A. LEWINSTEIN[1], [1]Ben-Gurion University, Beer-Sheva, Israel; [2]University of Trento, Trento, Italy

A-12.2: L09 **Optimization of IPMC Actuators Conversion Efficiency**
P. BRUNETTO, L. FORTUNA, P. GIANNONE, S. GRAZIANI, S. STRAZZERI, Università degli Studi di Catania, Catania, Italy

A-12.2: L10 **Tuneable Membrane for Electromagnetic Devices Using Dielectric Elastomers**
C. BOLZMACHER, K. BAUER, EADS Innovation Works, Munich, Germany; M. HAFEZ, Commissariat à l'Energie Atomique, Fontenay aux Roses, France; H. SEIDEL, U. SCHMID, Saarland University, Saarbrücken, Germany

A-12.2: IL11 **Synthesis and Characterization of Electro-thermally Sensitive Gels**
K.-F. ARNDT, A. RICHTER, S. KLATT, G. PASCHEW, Technical University of Dresden, Dresden, Germany

A-12.2: IL12 **Distributed Impedance Model of Ionic Polymer-metal Composite Actuators**
KENTARO TAKAGI, KINJI ASAKA, GOU NISHIDA, YOSHIHIRO NAKABO, ZHI-WEI LUO, RIKEN, Nagoya, Japan

A-12.2: L13 **A Distributed Electromechanical Model of Ionomeric Polymer Metal Composite (IPMC)**
A. PUNNING, U. JOHANSON, M. ANTON, M. KRUUSMAA, A. AABLOO, University of Tartu, Tartu, Estonia

Session A-12.3
Devices and Applications

A-12.3: IL01 **Multilayer Actuator and Sensor Sheets with Smart Compliant Electrodes**
P. SOMMER-LARSEN, K. HANSEN, Risoe National Laboratory, Roskilke, Denmark; M. BENSLIMANE, Danfoss A/S

A-12.3: L02 **Synthesis and Characterization of Hafnium Oxide and Hafnium Tantalum Oxide Nanocomposite Thin Films by a Sol-gel Spin Coating Process as High k Dielectric Materials for MEMS Applications**
A.R. PHANI, A. SCIARRA, S. SANTUCCI, University of L'Aquila, Coppito, L'Aquila, Italy

A-12.3: L03 **Bio-inspired Distributed Electroactive Polymer Actuators for Future Space Applications: Concept Design**
F. CARPI[1], C. MENON[2], D. DE ROSSI[1], [1]University of Pisa, Pisa, Italy; [2]Simon Fraser University, Burnaby, Canada

A-12.3: L04 **Contractile and Buckling Actuators Based on Dielectric Elastomers: Devices and Applications**
F. CARPI, G. FREDIANI, A. MANNINI, D. DE ROSSI, University of Pisa, Pisa, Italy

A-12.3: IL05 **Variable-stiffness-mode Dielectric Elastomer Devices**
R. PELRINE, SRI International, Menlo Park, CA, USA

A-12.3: IL06 **EAP Nanofibers for Biomedical Applications**
SEON JEONG KIM, Hanyang University, Seoul, Korea

SYMPOSIUM B

Smart Optics

Session B-1
Smart Optical Materials

B-1.1 Spectrally Active Materials and Devices

B-1.1: IL01 **Semi-metallic Materials for Spectral Variation**
SANG H. CHOI, NASA Langley Research Center, Hampton, VA, USA; YEONJOON PARK, National Institute of Aerospace, Hampton, VA, USA

B-1.1: IL02 **Advances in All-solid-state Switchable Mirror Devices**
K. YOSHIMURA, K. TAJIMA, Y. YAMADA, AIST, Nagoya, Japan

B-1.1: IL03 **Hydrogen-driven Switchable Mirrors**
R. GRIESSEN, B. DANN, H. SCHREUDERS, M. SLAMAN, VU University, Amsterdam, The Netherlands

B-1.1: L04 **Towards Electrochromic Devices Active in the Infrared Region**
K. SAUVET[1, 2], L. SAUQUES[2], A. ROUGIER[1], [1]Laboratoire de Réactivité et Chimie des Solides, Amiens, France; [2]DGA, Délégation Générale pour l'Armement-CEP, Arcueil cedex, France

B-1.1: L05 **Realization of Photochromic-polymeric Films for Optical Applications**
A. BIANCO[1, 2], C. BERTARELLI[2], G. DASSA[2], G. TOSO[2], G. ZERBI[2]; [1]INAF-IASF, Istituto di Astrofisica Spaziale e Fisica Cosmica, Milano, Italy; [2]Politecnico di Milano, Milano, Italy

B-1.1: L06 **Infrared Thermal Properties of RNiO3 Compounds**
C. NAPIERALA, Université François Rabelais, IUT Blois, and Centre d'Expertise Parisien, DGA, Arcueil, France ; M. EDELY, Université du Maine, France; P. LAFFEZ, Université François Rabelais, IUT Blois, France; L. SAUQUES, Centre d'Expertise Parisien, DGA, France

B-1.1: L07 **SmxNd1-xNiO3 Thin Films with Tunable Emissivity Coating**
P. LAFFEZ, C. NAPIERALA, Université F. Rabelais de Tours, Blois France; M. EDELY, S. GOUJON, Université du Maine, Le Mans, France; L. SAUQUES, Centre d'Expertise Parisien, Arcueil, France

B-1.1: L08 **Fast Switching Speed of Solid-State Electrochromic Devices for Flat Panel Displays**
H.M. YOCHUM, Sweey Briar College, Sweet Briar, VA, USA; V. JAIN, J.R. HEFLIN, Virginia Tech, USA

B-1.1: L09 **Self-supported Electrochromic Devices Based on Interpenetrated Polymer Network: A Novel Competitive Monoblock Architecture**
P. VERGE, P.H. AUBERT, F. VIDAL, L. BEOUCH, F. TRAN-VAN, DE TEYSSIÉ, C. CHEVROT, Université de Cergy-Pontoise, Cergy-Pontoise, France

B-1.2 Functional Materials and Liquid Crystals

B-1.2: IL01 **Advances in Nanostructured Holographic Polymer-Dispersed Liquid Crystals**
L.V. NATARAJAN[1, 2], V.P. TONDIGLIA[1, 2], T.J. WHITE[1, 3], P.F. LLOYD[1, 4], J. WOFFORD[1, 5], R.P. SUTHERLAND[1, 2], T.J. BUNNING[1], [1]Air Force Research Labs, RX, Wright Patterson Air Force Base, OH, USA; [2]Science Applications International Corporation (SAIC); [3]General Dynamics Information Technology (GDIT); [4]UES, Inc.; [5]SOCHE

B-1.2: IL02 **New Class of Highly Conjugated Nanomotors: Catenanes and Rotaxanes as Potential Candidates for Nonlinear Optical Applications**
R. CZAPLICKI, Z. ESSAIDI, F. KAJZAR, B. SAHRAOUI, University of Angers, Angers, France

B-1.2: IL03 **Coordinating Superaromatic Ligands: Synthetic and Photophysical Considerations**
S. DRAPER, University of Dublin, Dublin, Ireland

B-1.2: IL04 **Domain Reversal Patterning of Nanoscale Structures in Lithium Niobate**
P. FERRARO, S. GRILLI, CNR, Pozzuoli, Napoli, Italy

B-1.2: IL05 **Ferroelectric and Mesoscopical-Magnetic Properties of All-organic Chiral Nitroxide Radical Liquid Crystals**
R. TAMURA, Kyoto University, Kyoto, Japan

B-1.2: L06 **Liquid Crystal Photonics Applications**
V.G. CHIGRINOV, Hong Kong University of Science & Technology, Kowloon, Hong Kong

B-1.2: L07 **Light is a Powerful Tool to Aligning the Nano-Surface: Physics and Application of New Azo Dyes**
G. HEGDE, V. CHIGRINOV, H.S. KWOK, Hong Kong University of Science & Technology, Kowloon, Hong Kong

B-1.2: L08 **Ferroelectric Liquid Crystals vs. Dyed Ferroelectric Liquid Crystals**
A.K. SRIVASTAVA, R. MANOHAR, J.P. SHUKLA, University of Lucknow, Lucknow, India

B-1.3 Light Emitting Materials

B-1.3: IL01 **Characterization and Control of Recombination Dynamics in Low-dimensional InGaN-based Semiconductors**
Y. KAWAKAMI, A. KANETA, M. FUNATO, Kyoto University, Kyoto, Japan; Y. NARUKAWA, T. MUKAI, Nichia Corporation, Tokushima, Japan

B-1.3: IL02 **Nano-engineering of III-nitride Semiconductor Optoelectronics and New Applications**
N. TANSU, R.A. ARIF, YIK-KHOON EE, HONGPING ZHAO, HUA TONG, M. JAMIL, G.S. HUANG, Lehigh University, Bethlehem, PA, USA

B-1.3: IL03 **Efficiency Limiting Processes in Semiconductor Lasers: Challenges and Solutions**
S.J. SWEENEY, University of Surrey, Guildford, UK

B-1.3: IL04 **Glass Microspherical Lasers**
G. NUNZI CONTI, S. SORIA, Centro Studi e Ricerche "E. Fermi", Roma, Italy; S. BERNESCHI, M. BRENCI, S. PELLI, G.C. RIGHINI, IFAC-CNR, Sesto Fiorentino (FI), Italy; C. ARMELLINI, A. CHIAPPINI, A. CHIASERA, Y. JESTIN, M. FERRARI, IFN-CNR, Trento, Italy; L. GHISA, P. FÉRON, ENSSAT, Lannion, France

B-1.3: L05 **Structural and Spectroscopic Assessment of Er3+-activated SiO2-HfO2 Glass Ceramics Planar Waveguides**
L. MINATI[1], G. SPERANZA[1], V. MICHELI[1], C. ARMELLINI[2], A. CHIAPPINI[2], A. CHIASERA[2], Y. JESTIN[2], M. FERRARI[2], R. RETOUX[3], G.C. RIGHINI[4,5], [1]FBK-IRST, Povo, Italy; [2] CNR-IFN, Povo-Trento, Italy; [3]ENSICAEN, Caen, France; [4]CNR, Roma, Italy; [5]IFAC - CNR, Sesto Fiorentino (FI), Italy

B-1.3: L06 **Microstructural and Optical properties of p-type Gallium Nitride Nanorod Arrays on n-GaN/sapphire**
KEYAN ZANG, Institute of Materials Research and Engineering, Singapore; S.J. CHUA, University of Singapore, Singapore

B-1.3: L07 **Rhodamine 6G Encapsuled Mesoporous Silica Channels**
P.S. SARAN[1], M.A.U. MARTINES[1], H.F. DE BRITO[2], G.R. DE CASTRO[1], N.L. DIAS FILHO[1], L.A. ROCHA[3], Y. MESSADDEQ[3], S.J.L. RIBEIRO[3], [1]UNESP, Ilha Solteira, SP, Brazil; [2] IQ-USP, SP, Brazil; [3]UNESP, Araraquara, SP, Brazil

B-1.4 Metamaterials, Composite and Hybrid Materials

B-1.4: IL01 **Low Dimensional Composite Nanomaterials: Theory and Applications**
A. QUANDT, University of Greifswald, Greifswald, Germany

B-1.4: IL02 **Planar Photonic Metamaterials**
N. ZHELUDEV, University of Southampton, Southampton, UK

B-1.4: IL03 **Quantum-dot / Dendrimer Based FRET Structured Functional Nanotubes for Sensitive Studies of DNA Hybridization**
CHUAN LIANG FENG[1], XIN HUA ZHONG[2], M. STEINHART[3], A.-M. CAMINADE[4], J.P. MAJORAL[4], W. KNOLL[1], [1]Max Planck Institute for Polymer Research, Mainz, Germany; [2]East China University of Science & Technology, Shanghai, P. R. China; [3]Max Planck Institute of Microstructure Physics, Halle, Germany; [4]Centre National de la Recherche Scientifique,Toulouse Cedex , France

B-1.4: IL04 **Holographic Techniques to Study the Light Induced Diffusion of the Photosensitive Metal Alcoholates**
P.W. OLIVEIRA, P. KÖNIG, M. VEITH, Leibniz-Institut für Neue Materialen, Saarbrücken, Germany

B-1.5 Photonic Crystal Structures and Microstructured Fibers

B-1.5: IL01 **Negative Refraction in Photonic Crystals**
TOSHIHIKO BABA, TOMOHIKO ASATSUMA, TAKASHI MATSUMOTO, Yokohama National University, Yokohama, Japan

B-1.5: IL02 **Properties of Nanostructured Resonant Leaky-mode Photonic Devices**
R. MAGNUSSON, University of Connecticut, Storrs, CT, USA

B-1.5: IL03 **Fabrication of Microstructured Optical Fibres**
J. RAYSS, Maria Curie-Sklodowska University, Lublin, Poland

B-1.5: IL04 **Developing Single-mode Tellurite Glass Holey Fiber for Infrared Nonlinear Applications**
XIAN FENG, J.C. FLANAGAN, K.E. FRAMPTON, P. PETROPOULOS, J.H.V. PRICE, N.M. WHITE, W.H. LOH, H.N. RUTT, D.J. RICHARDSON, University of Southampton, Southampton, UK

B-1.5: IL05 **Fabrication and Characterization of Silica Opals**
C. ARMELLINI, A. CHIAPPINI, A. CHIASERA, M. FERRARI, Y. JESTIN, CNR-IFN, Povo-Trento, Italy; E. MOSER, University of Trento, Povo-Trento, Italy; R. RETOUX, CRISMAT, ENSICAEN, Caen, France; G. SPERANZA, L. MINATI, FBK-IRST, Povo, Italy; G. NUNZI CONTI, Centro Fermi, Roma, Italy; S. BERNESCHI, I. CACCIARI, S. PELLI, IFAC - CNR, Sesto Fiorentino, Italy; G.C. RIGHINI, CNR, Rome, and IFAC - CNR, Sesto Fiorentino, Italy

B-1.5: L06 **Low Frequency Coherent Raman Scattering of Spherical Acoustical Vibrations of Self-organized Three-dimensional Germanium Nanocrystals**
M. IVANDA, M. BULJAN, U.V. DESNICA, D. RISTIC, Rudjer Boskovic Institute, Zagreb, Croatia; M. FERRARI, Instituto di Fotonica e Nanotecnologie, Trento, Italy; G.C. RIGHINI, IFAC - CNR, Firenze, Italy

Session B-2
Passive, Active and Adaptive Optical Devices & Systems

B-2.1 Optical MEMS, Smart Optical Sensors and Devices

B-2.1: IL01 **Nanowire Superconducting Single-photon Detectors**
R.H. HADFIELD, Heriot-Watt University, Edinburgh, UK; SAE WOO NAM, M.J. STEVENS, R.P. MIRIN, National Institute of Standards and Technology, Boulder, CO, USA

B-2.1: IL02 **Elucidation of Interaction of SiO2 Glass with F2 Excimer Laser and Development of Optical Fibers for Deep UV**
HIDEO HOSONO, Tokyo Institute of Technology, Yokohama, Japan

B-2.1: IL03 **Fiber-Bragg-grating Sensors and Sensor Arrays**
H. BARTELT, Institute of Photonic Technology, Jena, Germany

B-2.1: IL04 **Enabling Devices Using MicroElectroMechanical System (MEMS) Technology for Optical Networking**
D.M. MAROM, Hebrew University, Jerusalem, Israel

B-2.1: IL05 **P-OLED / CMOS Microdisplays**
I. UNDERWOOD, A. BUCKLEY, C. YATES, M. NEWSAM, R. WOODBURN, MicroEmissive Displays Ltd., UK

B-2.1: L06 **Characterization of Brightness of Electroluminescent Device Using Powder Phosphor Composite with ZnO or TiO2**
MUN JA KIM[1], SUNG MIN PARK[1], SANG HYUN PARK[2], JIN YONG KIM[1], IN TACK HAN[2], AND JI-BEOM YOO[1], [1]Sungkyunkwan University, Suwon, Korea; [2]Samsung Advanced Institute of Technology, Suwon, Korea

B-2.1: L07 **Interferometric Sensors Realized with Micro-mirrors**
M. SICILIANI DE CUMIS[1], A. SEVERINO[1, 2], C. FREWIN[3], S.E. SADDOW[3], F. CATALIOTTI[4], F. MARIN[4], E. RIMINI[1, 2], G. D'ARRIGO[2], [1]University of Catania, Catania, Italy; [2]IMM-CNR, Catania, Italy; [3]University of South Florida, Tampa, FL, USA; [4]Universita' di Firenze and INFN Sezione di Firenze, Sesto Fiorentino (FI), Italy

B-2.1: L08 **Two-wavelength Contouring of High Speed MEMS with Digital Holography Using Femtosecond Laser Pulses**
T. HANSEL, R. GRUNWALD, G. STEINMEYER, U. GRIEBNER, Max Born Institute, Berlin, Germany; J. BONITZ, C. KAUFMANN, Technical University Chemnitz, Chemnitz, Germany

B-2.1: L09 **Optic Fiber Hydrogen Sensors Based on Mg-Ti**
M. SLAMAN, B. DAM, R. GRIESSEN, VU University, Amsterdam, The Netherlands

B-2.1: L10 **Non Contact Laser Speckle Sensor for Measuring One and Two-dimensional Angular Displacement**
D. ULIERU, A. TANTAU, E. ULIERU, A. MATEI, Romes SA, Bucharest, Romania

B-2.2 Adaptive Optical Elements and Adaptive/Smart Structures

B-2.2: IL02 **MEMS-based Photonic Modulators**
W. NOELL, Y. PÉTREMAND, S. WALDIS, M. ZICHAR, N.F. DE ROOIJ, University of Neuchâtel, Neuchatel, Switzerland; M. EPITAUX, Formerly at Intel Corporation, Newark, CA, USA; T. OVERSTOLZ, R. STANLEY, CSEM, Neuchatel, Switzerland; F. ZAMKOTSIAN, Lab. d'Astrophysique de Marseille, Marseille, France; R. HAUFFE, Hymite GmbH, Berlin, Germany

B-2.2: IL03 **Novel Piezo Actuators for Deformable Mirrors**
M. STRACHAN, UKATC, Edinburgh, UK; R. MYERS, University of Durham; K. KIRK, A.E. UZGUR, S. KIM, University of Paisley; M. KROEDEL, ECM; M. VAN VEGGEL, University of Glasgow

B-2.2: IL04 **Adaptive Optics and the Human Eye**
L. DIAZ-SANTANA, City University, London, UK

B-2.2: L05 **Development of Active Optical Systems by Application of PZT Thick Films**
S. GEBHARDT[1], A. SCHÖNECKER[1], C. BRUCHMANN[2], E. BECKERT[2], G. RODRIGUES[3], A. PREUMONT[3], [1]Fraunhofer Inst. für Keramische Technologien und Systeme, Dresden, Germany; [2]Fraunhofer Inst. für Optische Angewandte Optik und Feinmechanik, Jena, Germany; [3]Université Libre de Bruxelles, Brussels, Belgium

B-2.2: L06 **Implementation of a Wavefront-sensor-less Adaptive Optics System Using Piezo Deformable Mirror with Hysteresis Compensation**
H. SONG, G. SCHITTER, M. VERHAEGEN, Delft University of Technology, Delft, The Netherlands; G. VDOVIN, Flexible Optical B.V., Delft, The Netherlands

B-2.2: L07 **Electrowetting with Electrolytes: A New Microfluidic System with Unique Properties**
C.W. MONROE[1], L. DAIKHIN[2], M. URBAKH[2], A. SLEIGHTHOLME[1], A. KUCERNAK[1], A.A. KORNYSHEV[1], [1]Imperial College London, UK; [2]Tel Aviv University, Ramat Aviv, Israel

B-2.3 Advanced Material Processes and Fabrication Technologies

B-2.3: IL01 **Femtosecond Laser Applied for Nanotechnology and Biotechnology**
KAZUYUKI HIRAO, KIYOTAKA MIURA, MASAAKI SAKAKURA, Kyoto University, Kyoto, Japan

B-2.2: IL02 **Micro- and Nano-fabrication Technologies for Microoptical Elements & Systems**
E.-B. KLEY, Friedrich-Schiller University Jena, Jena, Germany

B-2.2: IL03 **Smart Processing of Micro Ceramic Structures: Development of Photonic Crystals and Fractals for Terahertz Wave Control by Using Micro-stereolithography**
SOSHU KIRIHARA, Osaka University, Ibaraki, Osaka, Japan

B-2.2: IL04 **Photomasks for Semiconductor Lithography: from Simple Shadow Casters to Complex 3D Scattering Objects**
A. ERDMANN, D. REIBOLD, T. FÜHNER, P. EVANSCHITZKY, Fraunhofer Institute IISB, Erlangen, Germany

Session B-3
Ongoing Applications and Perspectives

B-3: IL01 **The Smart Bridge of the Future**
B. CULSHAW, University of Strathclyde, Glasgow, Scotland

B-3: IL02 **Electrochromic Switchable Mirrors: Architectural Applications**
T.J. RICHARDSON, J.L. SLACK, A. NILSSON, A. ANDERS, Lawrence Berkeley National Laboratory, Berkeley, CA, USA

B-3: L03 **Alumina Sol-gel Protective Coatings on Multi-spectral ZnS Windows**
G.S. GRADER, M. MANN-LAHAV, G.E. SHTER, D. ESTERLIS, Technion, Haifa, Israel

B-3: L04 **FASSTT CIGS Printing Technology for Low-Cost Integration of Thin Film Photovoltaics into Buildings**
B.J. STANBERY, HelioVolt Corporation, Austin, TX, USA

B-3: L05 **Nanostructured Functional Coatings for Optical Applications**
J.-P. BOILOT, Ecole Polytechnique, Palaiseau, France

B-3: IL06 **Smart Focal Plane Technologies for Optical and Infrared Astronomy**
C.R. CUNNINGHAM, UK Astronomy Technology Center, Edinburgh, Scotland, UK

B-3: IL07 **Smart Windows**
C.G. GRANQVIST, Uppsala University, Uppsala, Sweden

B-3: IL08 **Fiber Bragg Grating Sensors Advancements and Industrial Applications**
A. CUTOLO, A. CUSANO, OptoSmart Srl, Napoli, Italy and University of Sannio, Benevento, Italy

B-3: IL09 **Smart Optics in Defence and Security Applications**
A.H. GREENAWAY, Heriot-Watt University, Edinburgh, Scotland, UK

SYMPOSIUM C

Emboding Intelligence in Structures and Integrated Systems

C: KL01 **Structural Intelligence: Self-monitoring, Actuation and Adaptation**
A. PREUMONT, R. BASTAITS, A. DERAEMAEKER, B. DE MARNEFFE, M. EL OUNI, G. RODRIGUES, Université Libre de Bruxelles, Brussels, Belgium

C: KL02 **Controlling Processes for Aerospace Materials - Challenge's and Opportunities**
T.P. RUSSELL, Air Force Office of Scientific Research, Arlington, VA, USA

C: KL03 **Microvascular Autonomic Composites**
S.R. WHITE, University of Illinois at Urbana-Champaing, Urbana, IL, USA

Session C-1
Smart Materials, Sensors / Actuators and Microsystems

C-1: IL01 **Conductive Nanoparticle Liquids and Proto-Assemblies: Regenerative Surfaces for Relays and MEMs**
R. VAIA, S. DIAMANTI, R. MacCUSPIE, KYOUNGWEON PARK, H. KOERNER, S. PATTON, A. VOEVODIN, Air Force Research Laboratory, WPAFB, OH, USA

C-1: IL02 **Mechatronics: The Innovation Request**
H. IRSCHIK, Johannes Kepler University of Linz, Linz, Austria

C-1: IL03 **Current Research Activities in Mechatronic Applications at AM-TUM**
H. ULBRICH, Technical University of Munich, Garching, Germany

C-1: IL04 **Piezoelectricity Experimentation, Modelling and Simulation: Common Practices and Realistic Considerations**
A. BENJEDDOU, Institut Supérieur de Mécanique de Paris, Saint Ouen, France

C-1: IL05 **Two-Dimensional Multifunctional Carbon Nanotube Sensing Skins for Crack, Impact, and Corrosion Monitoring of Structures**
K.J. LOH, TSUNG-CHIN HOU, J.P. LYNCH, N. KOTOV, University of Michigan, Ann Arbor, MI, USA

C-1: L06 **Soft Development Modules for Microcontroller-based Systems**
M.C. EDMONDSON, L. TANG, Massey University, Palmerston North, New Zealand

C-1: L07 **A Self-sensing Wedge-wave Ultrasonic Motor Using Modal Sensors**
TAI-HO YU, CHING-CHUNG YIN, National Chiao Tung University, Hsinchu, Taiwan, R.O.C.

C-1: L08 **Development of a New Ferroelectric Shell Finite Element. Application to a Smart Micro-component Design**
W. ZOUARI[1], M. ELHADROUZ[2], T. BEN ZINEB[1], [1]LEMTA, Nancy University, CNRS, Vandoeuvre-lès- Nancy, France; [2]LPMM, ENSAM, CNRS, Metz, France

C-1: L09 **Multi-scale Characterization of Ferroelectric Materials**
S. PRUVOST, G. SEBALD, A. HAJJAJI, L. LEBRUN, D. GUYOMAR, INSA-Lyon, Villeurbanne, France

C-1: L10 **Dynamic Displacement Tracking for Frame Structures with a Piezoelectric Patch Network based on Plate Theory Calculations**
D. HUBER, Linz Center of Mechatronics, Linz, Austria; M. KROMMER, H. IRSCHIK, Johannes Kepler University, Linz, Austria

C-1: L11 **A Consistent Finite Element Approximation for Piezoelectric Shell Structures**
D. LEGNER, S. KLINKEL, W. WAGNER, Universität Karlsruhe, Karlsruhe, Germany

C-1: L12 **Enhanced Piezoelectric Nanocomposites Fabricated through Electrospun Piezoceramic Nanowires**
H.A. SODANO, Arizona State University, Tempe, AZ, USA; J. FEENSTRA, Michigan Technological University, USA

C-1: L13 **Ultrasonic Extension Sensing of Actuators Using Integrated Piezoelectric Transducer for Adaptive Optics**
A. UZGUR[1], S. KIM[1], J. M. D. STRACHAN[2], K. J. KIRK[1], [1]University of Paisley, UK; [2]UK Astronomy Technology Centre, Edinburgh, UK

C-1: L14 **Saint-Venant End Effects of Transversely Isotropic Piezoelectric Strips with Clamped Sides**
MASYUKI TAI, A.C. WIJEYEWICKREMA, Tokyo Institute of Technology, Tokyo, Japan

C-1: IL15 **Wireless Sensing and Structural Control Strategies**
KINCHO H. LAW, Stanford University, Stanford, CA, USA; YANG WANG, Georgia Institute of Technology, Atlanta, GA, USA; J.P. LYNCH, University of Michigan, Ann Arbor, MI, USA

C-1: IL16 **Microsystems Technologies for Use in Structures and Integrated Systems**
A. SCHÖNECKER, Fraunhofer IKTS, Dresden, Germany

C-1: IL17 **Constitutive Model of Shape Memory Alloys: One-dimensional Phase Transformation Model**
TADASHIGE IKEDA, Nagoya University, Nagoya, Japan

C-1: IL18 **Design of Actuators Based on Ferromagnetic Shape Memory Alloy Composites**
MINORU TAYA, University of Washington, Seattle, WA, USA

C-1: L19 **Damping by SMA in Civil Engineering Structures**
F. MARTORELL, V. TORRA, A. ISALGUE, M.LL. PEREA, Polytechnic University of Catalonia, Barcelona, Catalonia, Spain; P. TERRIAULT, Université du Québec, Montreal, Québec, Canada; F.C. LOVEY, Centro Atómico Bariloche e Instituto Balseiro, S.C. de Bariloche, Argentina

C-1: L20 **Development of PMN-PT Single Crystal Actuator for Micro Positioning Devices**
MIN-GYU JANG, CHUL-HEE LEE, SEUNG-BOK CHOI, Inha University, Incheon, Korea

C-1: L21 **Investigation of Functional Properties of Lead-Zirconate-Titanate Ceramics Under Combined Electro-mechanical Load**
M. NICOLAI, A. SCHÖNECKER, Fraunhofer IKTS, Dresden, Germany

Session C-2
Integration Technologies

C-2: IL01 **Integrated Design of Smart Structures**
G.P. CIMELLARO, T.T. SOONG, A.M. REINHORN, State University of New York, Buffalo, NY, USA

C-2: IL02 **Adaptive Solutions for Intelligent Cable-vibration Mitigation**
L. FARAVELLI, C. FUGGINI, F. UBERTINI, University of Pavia, Pavia, Italy

C-2: IL03 **Humanoid Robot: A Best Integrative Platform to Bridge Science and Engineering**
MING XIE, Nanyang Technological University, Singapore

C-2: IL04 **Explicit Criteria of Stability and Reliability for Structural Systems**
A. KOVALEVA, Russian Academy of Sciences, Moscow, Russia

C-2: IL05 **Optimal Simulations for Large Dynamic Systems**
R. SKELTON[1], F. LI[2], M. DE OLIVEIRA[1], [1]UCSD, La Jolla, CA, USA; [2]Xerox Corp.

C-2: IL06 **The Art of Control Algorithms Design and Implementation**
J. RODELLAR, F. IKHOUANE, Universitat Politecnica de Catalunya, Barcelona, Spain

C-2: L07 **Control of Vibratory Energy Harvesting Systems with Optimized Passive Networks**
J. SCRUGGS, Duke University, Durham, NC, USA

C-2: L08 **Integration of Piezoceramic Modules into Die Castings - Procedure and Functionalities**
M. RÜBNER, C. KÖRNER, R.F. SINGER, University of Erlangen, Germany

C-2: L09 **Performance Characteristics of a Jetting Dispenser Featuring Piezostack and Flexible Beam Mechanism**
QUOC HUNG NGUYEN, SEUNG-BOK CHOI, CHUL-HEE LEE, Inha University, Incheon, Korea

C-2: L10 **Adaptive Control of Nonlinear Structures Using RBF Networks**
S. NARASIMHAN, University of Waterloo, Waterloo, Ontario, Canada

C-2: L11 **Control Algorithms for Semi-active Structural Systems: Do they Really Matter?**
A. OCCHIUZZI, Università degli Studi "Parthenope", Napoli, Italy

C-2: L12 **Model Development and Control Design of Smart Functionally Graded Structures**
D. MARINOVA, Technical University - Sofia, Sofia, Bulgaria

Session C-3
Smart Structures and Integrated Systems

C-3: L01 **Monitoring Prestress Level in Seven-wire Prestressing Tendons by Inter-wire Ultrasonic Wave Propagation**
F. LANZA DI SCALEA, I. BARTOLI, S. SALAMONE, R. PHILLIPS, University of California, San Diego, La Jolla, CA, USA; C. SIKORSKY, California Department of Transportation, USA

C-3: L02 **A Vibration Excitor for Evaluating Cable Damping of a Cable-stayed Bridge**
JAE-MIN KIM, Chonnam National University, Yeosu, Chonnam, Korea; JONG-JAE LEE, Saejong University, Seoul, Korea; SANG-SUP AHN, Korea Expressway Corporation, Hwa-Sung, Kyunggi, Korea; JUN-SEONG CHOI, KMC Inc., Seoul, Korea

C-3: L03 **Performance Evaluation of a Nonlinear Cable Damper for a Stay Cable Using Wind Vibration Analysis**
SAANG BUM KIM, S.J. LEE, W.J. YU, Samsung E&C, Sungnam-Si, Korea

C-3: L04 **Development of a Smart Anchor Using Steel Cable Embedding FBG Sensor**
YOUNG-SANG KIM[1], JAE MIN KIM[1], CHUNG BANG YUN[2], SEUNG RAE LEE[2], [1]Chonnam National University, Yeosu, Korea; [2]KAIST, Daejon, Korea

C-3: L05 **Response Control Performance Evaluation of MR Damper by Shaking Table Tests and Real-time Hybrid On-line Tests**
HIDEO FUJITANI, HIDEKI FUJII, MAI ITO, HIROAKI SAKAE, Kobe University, Kobe, Japan

C-3: L06 **A Reliability Assessment Model for MR Damper Components within a Structural Control Scheme**
M.H.M. HASSAN, British University in Egypt, Al-Shorouk City, Cairo, Egypt

C-3: L07 **Ride Comfort Investigation of a Full-vehicle Featuring Magnetorheological Shock Absorbers**
KUM-GIL SUNG, SEUNG-BOK CHOI, Inha University, Incheon, Korea

C-3: L08 **Anti-overturning Control of Serially Connected Isolation System Using Piezo Electric and MR Tube Support**
YONGFENG DU, YANHUI LIU, HUI LI, Lanzhou University of Technology, Lanzhou, PR China

C-3: L09 **On Behavior of Multi-layered Bases-foundations and Seismoisolators**
L.A. AGHALOVYAN, R.ZH. HOVHANNISYAN, Inst. of Mechanics, National Academy of Sciences of Armenia, Yerevan, Armenia

C-3: L10 **Fault Tolerant Neural Controller for Seismically Excited Smart Structures Experiencing Online Failure**
M. CONTRERAS[1], S. NARASIMHAN[2], S. NAGARAJAIAH[1], [1]Rice University, Houston, TX, USA; [2]University of Waterloo, Waterloo, Ontario, Canada

C-3: L11 **Optimal Placement of Smart MFC Actuators for Vibration Control of Cylindrical Shell Structure**
JUNG WOO SOHN, SEUNG-BOK CHOI, Inha University, Incheon, Korea

C-3: L12 **Mitigation of Wind-induced Vibration with Liquid Column Vibration Absorber**
HONGJIN KIM, W. KIM, Kyungpook National University, Daegu, Korea; S.-G. LEE, Chonnam National University, Gwangju, Korea; J.-S. CHO, D. KIM, POSCOENC, Seoul, Korea

C-3: L13 **Fundamental Study on Simple Quantitative Approach of Damping Performance for Variable Hydraulic Damper**
TAKESHI HIWATASHI, Toa Corporation, Yokohama, Japan; HIDEO FUJITANI, Kobe University, Kobe, Japan

C-3: L14 **Experimental Assessment of Structural Control Devices Used to Protect Civil Buildings**
G. MAGONETTE, EC - Joint Research Centre, Ispra, Italy

C-3: IL15 **Current Directions of Structural Control and Monitoring in USA**
S. NAGARAJAIAH, Rice University, Houston, TX, USA

C-3: IL16 **Examples of Future Potential Smart Civil Structures**
A.E. DEL GROSSO, University of Genoa, Genoa, Italy

C-3: L17 **Piezo-ElectroMechanical (PEM) Structures: Passive Vibration Control Using Distributed Piezoelectric Transducers**
F. DELL'ISOLA, S. VIDOLI, University of Rome "La Sapienza", Rome, Italy

C-3: L18 **Chemical Monitoring of Composite Matrices by Evanescent Wave Spectroscopy**
P.B.S. BAILEY, S.A. HAYES, R.J. HAND, B. ZHANG, University of Sheffield, Sheffield, UK

C-3: L19 **Robustness Improvement of Modal Active Control on On-board Electronic Boards Using Inline Identification Method**
B. CHOMETTE, D. REMOND, S. CHESNE, L. GAUDILLER, INSA-Lyon, Villeurbanne, France

C-3: L20 **An Experimental Study on the Use of Active Constrained Layer Damping for Thin Curved Smart Shell Structures**
P. SAINI, A. PANDHI, A.K. DARPE, Indian Institute of Technology Delhi, New Delhi, India

C-3: L21 **Verification of Robustness in Smart Composite Structures**
N. KIPNIS, R. TKACH, E. SHPITZER, D. KIPNIS, Rafael, Hasolelim, Israel

C-3: L22 **Active-passive Vibration Damping Using Extension and Shear Piezoelectric Materials Connected to Active-passive Networks**
M.A. TRINDADE, University of Sao Paulo, Sao Carlos, Brazil

C-3: IL23 **Holistic Design of Smart Piezoelectric Composite Structures**
U. GABBERT, University of Magdeburg, Magdeburg, Germany

C-3: IL24 **Control of Properties of Composite Structures with the Use of Multi-functional Materials**
W.M. OSTACHOWICZ, Polish Academy of Sciences, Gdansk, Poland

C-3: L25 **Design and Development of a Green Storage Tank for Thermo-controlled Water Supply**
HUNG-CHENG TSAI, Nanhua University, Chiayi, Taiwan; HUNG-JUNG TSAI, FEI-KUNG HUNG, WuFeng Institute of Technology, Chiayi, Taiwan

C-3: L26 **A Novel Variable Stiffness Device for Vibration Attenuation in Civil and Mechanical Systems**
K.K. WALSH, C.A. MOORE, A. WILLIAMS, M.M. ABDULLAH, Florida State University, Tallahassee, FL, USA

C-3: L27 **Remotely Controllable SHM System for a Concrete Box-girder Bridge**
JONG JAE LEE, Sejong University, Seoul, Korea; K.Y. KOO, J.Y. HONG, C.B. YUN, KAIST, Daejeon, Korea

C-3: IL28 **Wireless and Self-powered Smart Structures**
D. GUYOMAR, INSA Lyon, Villeurbanne, France

C-3: IL29 **Some Advances in Energy Recycling Semiactive Vibration Suppression**
JUNJIRO ONODA, Japan Aerospace Exploration Agency, Sagamihara, Japan

C-3: IL30 **Experimental Investigation of Effectiveness of Smart Passive System for Seismic Protection of Building Structures**
HYUNG-JO JUNG, HEON-JAE LEE, DONG-DOO JANG, KAIST, Daejeon, Korea; SEOK-JUN MOON, KIMM, Korea

C-3: IL31 **Amplification of Interstory Drift and Velocity for the Passive Control of Structural Vibrations**
M. DI PAOLA[1], F. LO IACONO[2], G. NAVARRA[1], [1]Università degli Studi di Palermo, Palermo, Italy; [2]Università "Mediterranea" di Reggio Calabria, Reggio Calabria, Italy

Session C-4
Structural Monitoring

C-4: IL01 **A Reference-free Paradigm for Structural Health Monitoring**
HOON SOHN, KAIST, Daejeon, South Korea

C-4: IL02 **Vibration-based Structural Health Monitoring - Current Status and Future Perspectives**
C.-P. FRITZEN, University of Siegen, Siegen, Germany

C-4: IL03 **Quantifying Performance of SHM**
FU-KUO CHANG, Stanford University, Stanford, CA, USA

C-4: IL04 **Limits of Elliptical Triangulation Algorithm for Structural Health and Usage Monitoring of Aeronautical Structures**
C. PAGET, Airbus, Bristol, UK

C-4: IL05 **SHM System Integration and Supporting Algorithms**
AKIRA MITA, Keio University, Yokohama, Japan

C-4: IL06 **Piezoelectric Impedance Sensor-based Structural Health Monitoring for Critical Members of Civil Infrastructures**
CHUNG-BANG YUN, SEUNGHEE PARK, KAIST, Daejeon, Korea

C-4: L07 **Damage Detection with Auxiliary Subsystems**
F. VESTRONI, S. VIDOLI, F. DELL'ISOLA, J. CIAMBELLA, Università di Roma "La Sapienza", Roma, Italy

C-4: L08 **Development of a Structural Health Monitoring System for Guangzhou New TV Tower**
Y.Q. NI, Y. XIA, W.Y. LIAO, P. ZHANG, The Hong Kong Polytechnic University, Kowloon, Hong Kong

C-4: L09 **Transfer Matrix Technique Based Local Damping Evaluation**
AKIRA NISHITANI, DAIKI NAKAMIZO, Waseda University, Tokyo, Japan; SEIJI YAMADA, Railway Technical Research Institute; YOSHIHIRO NITTA, Ashikaga Institute of Technology, Japan

C-4: L10 **Wireless Sensing and Embedded Monitoring Algorithm for Damage Diagnosis in PSC Girders**
JEONG-TAE KIM, JAE-HYUNG PARK, DONG-SOO HONG, Pukyong National University, Busan, Korea

C-4: L11 **Smart Nonlinear Acoustic Based Structural Health Monitoring System**
M. MEO, U. POLIMERO, The University of Bath, Bath, UK

C-4: IL12 **Comparative Study on Damage Detection of Structure Using Time Domain and Frequency Domain Analysis**
CHIN-HSIUNG LOH, JIAN-HUANG WONG, National Taiwan University, Taipei, Taiwan

C-4: IL13 **On the Development of Efficient Damage Diagnosis Algorithms for Local Sensor-level Processing**
A. KIREMIDJIAN, K. NAIR, A. CHEUNG, H. NOH, Stanford University, Stanford, CA, USA

C-4: L14 **Modal Monitoring Fault Through of Observer State Methodology**
A.A. CAVALINI JUNIOR, D. DOMINGUES BUENO, C. RODRIGO MARQUI, V. LOPES JUNIOR, G. PECHOTO DE MELO, UNESP/FEIS, Ilha Solteira, Sao Paulo, Brazil

C-4: L15 **Monitoring the Condition of Thermoset Composite Elements by Using a "Multi-Axial Strain" Fibre Optic Sensor**
G. LUYCKX, E. VOET, W. DE WAELE, W. VAN PAEPEGEM, J. DEGRIECK, Ghent University, Ghent, Belgium; J. VLEKKEN, FOS&S, Geel, Belgium

C-4: L16 **High Strain Monitoring During Fatigue Loading of Thermoplastic Composites Using Imbedded Draw Tower Fibre Bragg Grating Sensors**
E.J. VOET, G. LUYCKX, I. DE BAERE, J. DEGRIECK, Ghent University, Ghent, Belgium; J. VLEKKEN, E. JACOBS, FOS&S, Geel, Belgium; H. BARTELT, IPHT, Jena, Germany

C-4: L17 **Self-detection of Delamination in Active Fiber Composites**
DWO-WEN WANG, WEN-CHIH TSAI, CHING-CHUNG YIN, National Chiao Tung University, Hsinchu, Taiwan, ROC

C-4: L18 **Stochastic Vector AutoRegressive eXogenous (VARX) Identification of a Smart Composite Beam**
J.D. HIOS, S.D. FASSOIS, University of Patras, Patras, Greece

C-4: L19 **Optimisation of Signal Pre-processing for the Integration of Cost-effective Local Intelligence in Wireless Self-powered Structural Health Monitoring**
T. MONNIER, P. GUY, M. LALLART, L. PETIT, D. GUYOMAR, C. RICHARD, INSA-Lyon, Villeurbanne, France

C-4: L20 **Numerical Simulation for Health Monitoring of Concrete Structure Based on Smart Piezoelectric Transducer Array**
WEI SUN[1, 2], SHI YAN[2], G. SONG[3], H. GU[3], [1] Dalian University of Technology, Dalian Liaoning , China; [2] Shenyang Jianzhu University, Shenyang Liaoning, China; [3] University of Houston, TX, USA

C-4: L21 **Wavelet-Based Algorithm for Ultrasonic Structural Monitoring of Waveguides**
M. CAMMARATA, University of Pittsburgh, PA, USA; D. DUTTA, Carnegie Mellon University, Pittsburgh, PA, USA; H. SOHN, KAIST, Daejeon, South Korea; P. RIZZO, K.A. HARRIES, University of Pittsburgh, Pittsburgh, PA, USA

C-4: L22 **Damage Detection in Beam-like Structures Using Deflections Obtained by Modal Flexibility Matrices**
KI YOUNG KOO, C.B. YUN, Korea Advanced Institute of Science and Technology, Daejeon, Korea; J.T. KIM, Pukyong National University, Busan, Korea; Y.H. HUH, Korea Research Institute of Standards and Science, Daejeon, Korea

C-4: L23 **Development of a Structural Health Monitoring Benchmark Problem for High-rise Structures**
Y. XIA, Y.Q. NI, Y.F. DUAN, J.M. KO, The Hong Kong Polytechnic University, Kowloon, Hong Kong

C-4: L24 **Continuing Structural Health Monitoring after Repair: Start from Scratch?**
J. KULLAA, Helsinki Polytechnic Stadia, Helsinki, Finland

C-4: L25 **Multivariate Statistical Analysis for Detection and Identification of Faulty Sensors Using Latent Variable Methods**
M. HERNANDEZ-GARCIA, S.F. MASRI, University of Southern California, Los Angeles, CA, USA

C-4: L26 **Numerical Methods in the Dynamic Analysis of Buildings Provided with Viscoelastic Devices**
G. MUSCOLINO, University of Messina, Messina, Italy; A. PALMERI, University of Bradford, UK

C-4: IL27 **Dynamic Response-based Health Monitoring of Civil Structures Under Environmental Influences**
M.P. SINGH, H. NANDAN, Virginia Tech, Blacksburg, VA, USA

C-4: IL28 **Optimization Algorithms for System Integration**
C. PAPADIMITRIOU, E. NTOTSIOS, University of Thessaly, Volos, Greece

Session C-5
Ongoing and Perspective Applications

C-5: IL01 **Biosensing & Bioactuation: A New Research Frontier**
SHIH-CHI LIU, G. YANG, National Science Foundation, Arlington, VA, USA

C-5: IL02 **Biologically Inspired Shape Changing Aerodynamic Profiles and their Effect on Flight Performance of Future Aircraft**
C. BOLLER, CHEN-MING KUO, NING QIN, The University of Sheffield, Sheffield, UK

C-5: IL03 **Bio-inspired Autonomic Structures**
R.A. SHOURESHI, University of Denver, Denver, CO, USA

C-5: IL04 **Innovative Concepts for Helicopter Rotor Morphing**
F. GANDHI, Penn State University, University Park, PA, USA

C-5: L05 **Innovations in Smart Materials and Integrated Structural Health Monitoring in the Australian Defence Force**
M.E. IBRAHIM, C.M. SCALA, Defence Science and Technology Organisation, Fishermans Bend, Victoria, Australia

C-5: L06 **Vibration Damage Reduction of On-board Electronic Boards Using Modal Active Control**
B. CHOMETTE, S. CHESNE, D. REMOND, L. GAUDILLER, INSA-Lyon, Villeurbanne, France

C-5: L07 **Monitoring Data for the Structural Assessment of Historical Buildings**
S. CASCIATI[1], S. FLORIDIA[2], N. IMPOLLONIA[1], E. REALE[3], [1]University of Catania at Siracusa, Italy; [2]Consulting Engineer, Siracusa, Italy; [3]Consulting Architect, Siracusa, Italy

C-5: IL08 **Protection of Mediterranean Historical Structures Against Earthquakes Using Fragility Curves**
C.A. SYRMAKEZIS, National Technical University of Athens, Athens, Greece

C-5: L09 **Wireless Sensor Node Development for Bridge Condition Assessment**
CHUL-WOO KIM, M. KAWATANI, M. TSUKAMOTO, N. FUJITA, Kobe University, Kobe, Japan

C-5: L10 **Quantifying the Benefit of Smart Technologies in a Life-cycle Context**
D.M. FRANGOPOL, R.K. FAZLUR, Lehigh University, Bethlehem, PA, USA; T.B. MESSERVEY, University of Pavia, Pavia, Italy

C-5: L11 **Wing Mechanization Design and Analysis for a Perching Micro Air Vehicle**
J.M. LUKENS, University of Dayton, Dayton, OH, USA; G.W. REICH, B. SANDERS, Air Vehicles Directorate, WPAFB, OH, USA

C-5: L12 **Dynamic Material Application in Architectural Environments**
C. LELIEVELD, L. VOORBIJ, W. POELMAN, TU Delft, Delft, The Netherlands

C-5: IL13 **Maltese Falcon, Megayacht with Smart Masts and Yards**
D. ROBERTS, Insensys Ltd., Southampton, UK

C-5: IL14 **Multifunctional Textiles for Protection Against Natural Hazards**
D. ZANGANI,D'Appolonia SpA, Genova, Italy

C-5: IL15 **Smart Patches for Repairing Aircraft Structures**
A. GÜEMES, Universidad Politecnica de Madrid, Madrid, Spain

C-5: IL16 **Adaptive Impact Absorption and Applications to Landing Devices**
J. HOLNICKI-SZULC, P. PAWLOWSKI, G. MIKULOWSKI, C. GRACZYKOWSKI, Institute of Fundamental Technological Research, Warsaw, Poland

SYMPOSIUM D

Biomedical Applications of Smart Materials, Nanotechnology and Micro/Nano Engineering

Session D-1
Advances in Smart Materials Synthesis and Functionality

D-1: IL01 **Carbon Nanotubes, Biomolecules and Cellular Interactions**
G.G. WALLACE, University of Wollongong, Wollongong, Australia

D-1: IL02 **Lab on a Chip Devices for Preventive Medical Engineering**
YOSHINOBU BABA, Nagoya University, Nagoya, Japan

D-1: IL03 **Self-oscillating Gel as Smart Materials**
RYO YOSHIDA, The University of Tokyo, Tokyo, Japan

D-1: IL04 **Biomedical Applications of Superhydrophobic Surfaces**
S.E.J. BELL, I.A. LARMOUR, H.J. ABRAHAM, G.C. SAUNDERS, C.P. McCOY, D.S. JONES, S.P. GORMAN, Queen's University, Belfast, UK

D-1: IL05 **Bioinspired Polymer Surfaces for Nanodevices and Nanomedicine**
KAZUHIKO ISHIHARA, The University of Tokyo, Tokyo, Japan

D-1: L06 **Functionalisation of Carbon Nanotubes for Improved Cellular Adhesion**
R.L. SPEAR, E. EDER, A.H. WINDLE, S.M. BEST, R.E. CAMERON, N. RUSHTON, R. BROOKS, University of Cambridge, Cambridge, UK

D-1: IL07 **Smart Hydrogels that Respond to Target Biomolecules**
TAKASHI MIYATA, Kansai University, Osaka, Japan

D-1: L08 **Electrochemically Tailored Stability of Layer-by-layer Polyelectrolyte Films**
L. DIÉGUEZ[1, 2], T. ZAMBELLI[1], F. BOULMEDAIS[3], P. SCHAAF[3], J. VÖRÖS[1], [1]University and ETH Zurich, Switzerland; [2]University of Barcelona, Spain; [3]Inst. Charles Sadron, CNRS, Strasbourg, France

D-1: L09 **Biocompatible Near Infrared Fluorescent Labels Based on Apoferritin-encapsulated PbS Quantum Dots**
L. TURYANSKA, B. HENNEQUIN, N.R. THOMAS, A. PATANE, University of Nottingham, Nottingham, UK; T. BEN, A.M. BELTRAN, S.I. MOLINA, Universidad de Cadiz, Puerto Real, Spain

D-1: IL10 **Encouraging Nature with Ceramics**
K. HING, Queen Mary University of London, London, UK

D-1: L11 **Synthesis of Bioactive Hydroxyapatite-zirconia Toughened Composites for Bone Replacement**
B. CIONI, A. LAZZERI, G. GALLONE, G. LEVITA, University of Pisa, Pisa, Italy

D-1: IL12 **Generating and Optimising Geometry of Shape Memory Alloy-Textile Composites for Vascular Intervention**
T. ANSON, Brunel University, Uxbridge, Middlesex, UK; P. DYER, University of Brighton, Brighton, UK

D-1: L13 **Investigation of Tribological Performance of Hard/Soft Mixed Coatings Using a Superelastic NiTi Alloy as Interlayer for Orthopaedic Implant Surfaces**
T.A.A. BAKAR, J. STOKES, M.S.J. HASHMI, Dublin City University, Dublin, Ireland

D-1: L14 **Synthesis and Characterization of Nanoparticles of La1-xAgyMnO2.95 for Biomedical Application**
O.V. MELNIKOV, O.YU. GORBENKO, M.N. MARKELOVA, A.R. KAUL, Lomonosov Moscow State University, Moscow, Russia; V.A. ATSARKIN, V.V. DEMIDOV, Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Moscow, Russia

Session D-2
Enabling Tools

D-2: IL01 **Micro-nanotechnology for Biomedical Applications**
R. WECHSUNG, Boehringer Ingelheim microParts GmbH, Dortmund, Germany

D-2: IL02 **Multifunctional Magnetic Nanocarriers: from Material Design to Magnetic Manipulation for Diagnostic Applications**
T. VERES, Industrial Materials Institute, National Research Council Canada, Montreal, Canada

D-2: L03 **Microsystems for Blood Cell Counting**
N. PIACENTINI, P. CIVERA, M. KNAFLITZ, Politecnico di Torino, Torino, Italy

D-2: L04 **Design and Simulation of an Interdigital Micromixer for Lab-on-a-chip Applications**
K. KHOSHMANESH, A.Z. KOUZANI, S. NAHAVANDI, J. KANWAR, Deakin University, Geelong, Vic, Australia

D-2: IL05 **Polymer-biological Tissue Adhesion - A Conceptual Study**
AKIO KISHIDA, T. KIMURA, K. SHIBA, K. YAMAMOTO, Tokyo Medical and Dental University, Tokyo, Japan; A. KATO, T. MASUZAWA, Ibaraki University, Ibaraki, Japan; T. HIGAMI, Sapporo Medical University, Hokkaido, Japan

D-2: L06 **The Effect of Magnetic Field on Magnetotactic Bacteria Behaviors**
HIDEHARU TAKAHASHI[1], H. KIKURA[1], T. IWASA[2], S. WATANABE[2], M. ARITOMI[1], [1]Tokyo Institute of Technology, Tokyo, Japan; [2]Muroran Institute of Technology, Muroran, Japan

D-2: L07 **Low Voltage Microgripper for Single Cell Manipulation**
B. SOLANO, D. WOOD, Durham University, Durham, UK

D-2: L08 **A New Force Controlled Liquid Injection System for Biomedical Applications**
M. GABI, ETH Zürich, Zürich, Switzerland; J. POLESEL-MARIS, A. MEISTER, M. LILEY, H. HEINZELMANN, Swiss Center for Electronics and Microtechnology CSEM, Neuchâtel, Switzerland; J. VÖRÖS, T. ZAMBELLI, ETH, Zürich, Switzerland

D-2: L09 **Simulation of water flow in a coated nano pore by a molecular dynamics**
KEISUKE YAMAMOTO, T. IWATUBO, K. SAITOU, T. MORIUCHI, Kansai University, Suita-shi, Osaka, Japan

D-2: IL10 **Biochemical Sensors Based on Specific Adsorption of Oligonucleotides**
M.R. BEGLEY, M. UTZ, J. LANDERS, E. SEKER, LING HUANG, University of Virginia, Charlottesville, VA, USA

D-2: L11 **Field-effect Controlled Single-walled Carbon Nanotube Devices for Biomedical Sensor Applications**
U. SCHWALKE, Darmstadt University of Technology, Darmstadt, Germany

D-2: L12 **Magnetoelastic Biosensors for the Detection of Spores**
JIEHUI WAN, V.A. PETRENKO, Z.-Y. CHENG, J.M. BARBAREE, B.A. CHIN, Auburn University, Auburn, AL, USA

Session D-3
Medical Diagnostics Applications

D-3: IL01 **DNA-based Transistor**
YUJI MIYAHARA, National Institute for Materials Science, and The University of Tokyo, Tokyo, Japan

D-3: IL02 **Superparamagnetic Iron Oxide Nanoparticles (SPION) as Probe in Living Cell**
H. HOFMANN, A. FINK-PETRI, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

D-3: IL03 **Biocompatible Nanoparticles-based QDs for In-vivo Imaging**
M.G. SANDROS, M. BEHRENDT, D. MAYSINGER, M. TABRIZIAN, McGill University, Montreal, Canada

D-3: IL04 **Wearable Biosensors for Monitoring Wound Healing**
S. PASCHE, S. ANGELONI, R. ISCHER, M. LILEY, J. LUPRANO, G. VOIRIN, Centre Suisse d'Electronique et de Microtechnique SA, Neuchâtel, Switzerland

D-3: IL05 **Wearable Intelligent Systems Achievements, Challenges and Perspectives**
A. LYMBERIS, European Commission, Brussels, Belgium

D-3: IL06 **Multimodal on Body Sensing for Health Care Application**
P. LUKOWICZ, University of Passau, Passau, Germany

D-3: L07 **Biocompatibility of Iron-oxide Magnetic Nanoparticles**
V. LABHASETWAR, Cleveland Clinic Foundation, Cleveland, OH, USA

Session D-4
Regenerative Medicine and Tissue Engineering

D-4: IL01 **Self-assembly: Allowing Cells to Generate their Own Extracellular Matrix for Tissue Engineering Applications**
F.A. AUGER, Laval University, Québec City, QC, Canada

D-4: IL02 **Analysis of Material for Corneal Cell Therapy**
G. PELLEGRINI, University of Modena and Reggio Emilia, Modena, Italy; J. TORBET, CNRS, Lyon, France; V. HASIRCI, METU, Ankara, Turkey

D-4: IL03 **Novel Nitrogen Rich Plasma Polymers and Chitosan for Tissue Engineering of Intervertebral Discs**
F. MWALE, McGill University, and Lady Davis Institute for Medical Research, Montreal, Quebec, Canada

D-4: IL04 **Biologic Scaffolds for Tissue Reconstruction**
S.F. BADYLAK, University of Pittsburgh, Pittsburgh, PA, USA

D-4: L05 **Tissue Engineering Technology to Realize Regenerative Medical Therapy**
YASUHIKO TABATA, Kyoto University, Kyoto, Japan

D-4: L06 **Electrospun Nanofibre Membranes as Wound Dressing Materials**
XIN LIU, T. LIN, J. FANG, X. WANG, Deakin University, Geelong, Vic, Australia

Session D-5
New Therapeutics and Intelligent Delivery Systems

D-5: IL01 **Bacteria Integrated Swimming Microrobots for Future Medical Applications**
M. SITTI, Carnegie Mellon University, Pittsburgh, PA, USA

D-5: IL02 **Multifunctional Envelope Type Nano Device for Non-viral Gene Delivery: Concept and Application for Nanomedicine**
HIDEYOSHI HARASHIMA, Hokkaido University, Sapporo, Japan

D-5: L03 **A new Drug Vehicle for Pulmonary Application - Lipid Coated Biodegradable Nanoparticles**
J. SCHÄFER, J. SITTERBERG, U. BAKOWSKY, Philipps University of Marburg, Marburg, Germany

D-5: L04 **Base Invaders. Coupling Experiments and Multiscale Modeling of Dendrimer-Based siRNA Delivery Agents**
S. PRICL, P. POSOCCO, M. FERMEGLIA, University of Trieste, Trieste, Italy; G. SCOCCHI, A. DANANI, ICIMSI-SUPSI, Manno, Switzerland; C. CATAPANO, Iosi, Bellinzona, Switzerland; M. MALY, Academy of Sciences of the Czech Republic, Prague, The Czech Republic; J.-W. HANDGRAAF, H.J.G.E.M. FRAAIJE, Culgi B.V. and University of Leiden, Leiden, The Netherlands

D-5: L05 **Dynamics, Biorheology and Biomechanics of Smart Suspensions in Blood**
E. TARAN, V. GRYAZNOVA, O. MELNYK, National Taras Shevchenko University of Kyiv, Kyiv, Ukraine

D-5: IL06 **Multifunctional Pharmaceutical Nanocarriers for Drug Delivery and Diagnostic Applications**
V.P. TORCHILIN, Northeastern University, Boston, MA, USA

D-5: IL07 **Supramolecular Approach to Gene Delivery**
NOBUHIKO YUI, Japan Advanced Institute of Science and Technology, Nomi, Ishikawa, Japan

D-5: IL08 **Electrohydrodynamic Forming of Capsules and Microspheres for Drug Delivery**
M.J. EDIRISINGHE, E.P. STRIDE, University College London, London, UK

D-5: L09 **Multifunctional Nanoparticles Decorated by Trastuzumab for Targeted Chemotherapy of Breast Cancer**
BINFENG SUN, S.-S. FENG, National University of Singapore, Singapore

D-5: L10 **Inhibition of Alzheimer Amyloid Aggregation with Sulfated Glycopolymers**
YOSHIKO MIURA, KIYOFUMI YAMAMOTO, Japan Advanced Institute of Science and Technology, Nomi, Ishikawa, Japan; KIKUKO YASUDA, YOSHIHIRO NISHIDA, KAZUKIYO KOBAYASHI, Nagoya University, Nagoya, Japan

D-5: L11 **A Novel Nanocomposite Microsphere for Controlled Drug Release**
YUFENG ZHAO, XIGENG MIAO[1], LINGXUE KONG, P. HODGSON, Deakin University, Geelong Campus, Victoria, Australia; [1]Queensland University of Technology, Kelvin Grove, Queensland, Australia

Session D-6
Advances in Mini/Micro/Nano Implantable Devices

D-6: IL01 **Intelligent Polymer Networks as Recognition and Actuation Elements**
J.Z. HILT, University of Kentucky, Lexington, KY, USA

D-6: IL02 **Energy Efficient Biomedical Signal Processing in Implantable Devices**
V. ÖWALL, L. SÖRNMO, J. NEVES RODRIGUES, Lund University, Lund, Sweden

D-6: L03 **Towards an Integrated, Fully-Implantable Vestibular Prosthesis for Balance Restoration**
T.G. CONSTANDINOU[1, 2], J. GEORGIOU[1], C. TOUMAZOU[2], [1]University of Cyprus, Nicosia, Cyprus; [2]Imperial College London, London, UK

D-6: IL04 **Implantable Electronics for the Recovery of Neuromuscular Functions**
M. SAWAN, Ecole Polytechnique, Montreal, Canada

D-6: L05 **Improved Wireless, Transcoutaneous Power Transmission for In-vivo Medical Applications**
R.C. O'HANDLEY, J. SIMON, J.K. HUANG, D. BONO, Ferro Solutions, Inc., Cambridge, MA, USA

Session D-7
Medical Applications of Shape Memory Materials and Smart Textiles

D-7: IL01 **Medical Applications of Shape Memory Alloys**
L'H. YAHIA, J. MOORE, R. AYERS, M. BEAUMIER, A. WARRAK, F. RAYES, Ecole Polytechnique, Montreal, Canada

D-7: L02 **Fatigue properties of superelastic Nitinol filaments for braided orthopedic cables**
Y. BARIL, V. BRAILOVSKI, P. TERRIAULT, Ecole de Technologie Supérieure, Montréal (Quebec), Canada

D-7: IL03 **Theory and Experiments for Mechanically-induced Remodeling of Tissue Engineered Blood Vessels**
R.L. GLEASON, Georgia Institute of Technology, Atlanta, GA, USA

D-7: L04 **Surface Catalytic Properties of NiTi Shape Memory Alloy for Medical Application**
N.N. RESNINA, A.N. DANILOV, Saint-Petersburg University, Saint-Petersburg, Russia

D-7: L05 **Design and Validation of a Progressively Expandable Stent**
P. TERRIAULT, P. LAFORTUNE, D. PLAMONDON, V. BRAILOVSKI, Ecole de Technologie Supérerieure, Montréal, Québec, Canada; D. LE PORHO, Polyconsult International Inc., Longueuil, Québec, Canada; R. GALLO, Montreal Heart Institute, Montréal, Québec, Canada

D-7: IL06 **Functional Materials for Wearable Sensors and Actuators**
D. DE ROSSI, University of Pisa, Pisa, Italy

D-7: IL07 **Bio-sensing Textile for Medical Monitoring Applications**
J. LUPRANO, Centre Suisse d'Electronique et de Microtechnique, Neuchâtel, Switzerland; N. TACCINI, Smartex, Navacchio, Italy; F. DI FRANCESCO, University of Pisa, Pisa, Italy; G. MARCHAND, CEA-LETI, Grenoble, France; C. CHUZEL, Sofileta, Bourgoin-Jallieu, France; H. DE MONCUIT, Thuasne, St-Etienne, France; C. BINI, Penelope, Montemurlo, Italy; K. LAU, Dublin City University, Dublin, Ireland

D-7: IL08 **Shape-memory Polymers for Biomedical Applications**
A. LENDLEIN, GKSS Research Centre Geesthacht, Teltow, Germany

SYMPOSIUM E

Mining Smartness from Nature

Session E-1
Algorithms, Mechanisms and Structures in Nature as Inspiration for Mimicking

E-1.1 Biological Approaches and Solutions

E-1.1: IL01 **A Biomimetic Approach to Materials Science**
G. JERONIMIDIS, University of Reading, Reading, UK

E-1.1: IL02 **Spider Silk as an Inspiration for Mimicking**
M. ELICES[1], J. PÉREZ-RIGUEIRO[1], G.R. PLAZA[1], G.V. GUINEA[1], P. CORSINI[2], E. MARSANO[2], [1]Universidad Politécnica de Madrid, Madrid, Spain; [2]Università di Genova, Genova, Italy

E-1.1: IL03 **Plant Cell Wall as a Model for Biomimetic Composite Materials**
T.T. TEERI, KTH Biotechnology, AlbaNova, Stockholm, Sweden

E-1.1: IL04 **Sensorimotor Coordination Abilities of Animals as Inspiration for the Control of Robots' Locomotion**
A.J. IJSPEERT, Ecole Polytechnique Federale de Lausanne, Switzerland

E-1.1: IL05 **DNA Machines: Novel Tools for Bionanotechnology and Diagnostics**
M.K. BEISSENHIRTZ, University of Potsdam, Golm, Germany

E-1.1: L06 **Multi-scale Optical Response of Structured Surfaces in Living Organisms**
J.P. VIGNERON, M. RASSART, University of Namur, Namur, Belgium

E-1.1: IL07 **Cells, Gels and Water: A Fresh Approach to Cell Function**
G.H. POLLACK, University of Washington, Seattle, WA, USA

E-1.1: IL08 **New Insights in Viral Symmetry**
R. TWAROCK, University of York, York, UK

E-1.1: IL09 **Approaches to the Construction of the Minimal Cell**
P.L. LUISI, University of Rome3, Rome, Italy

E-1.1: IL10 **Molecular Biomimetics: Genome-based Molecular Materials for Technology & Medicine**
M. SARIKAYA, University of Washington, Seattle, WA, USA

E-1.2 Biomechanics

E-1.2: IL01 **Flight Control of an Insect**
SHIGERU SUNADA, Osaka Prefecture University, Osaka, Japan

E-1.2: IL02 **Wood Biomechanics**
L. SALMEN, STFI-Packforsk, Stockholm, Sweden

E-1.2: L03 **Different Influence of Surface Energy and Surface Roughness on the Adhesive Ability of Female and Male Beetles Gastrophysa Viridula**
NAOE HOSODA[1], S.N. GORB[2], [1]National Institute for Material Science, Tsukuba, Ibaraki, Japan; [2]Max Planck Institute for Metals Research, Stuttgart, Germany

E-1.3 Biologically Inspired Structures

E-1.3: IL01 **Micropatterned Adhesive Surfaces: Recent Advances**
E ARZT, A. DEL CAMPO, INM - Leibniz Institute for New Materials, Saarbruecken, Germany

E-1.3: IL02 **Biomimetic Inspirations for Micro Air Vehicles**
C.P. ELLINGTON, University of Cambridge, Cambridge, UK

E-1.3: L03 **Investigating the Thrust Productions of a Myliobatoid-inspired Oscillating Wing**
K. MOORED, H. BART-SMITH, University of Virginia, Charlottesville, VA, USA

E-1.3: L04 **Bioinspired Fibrillar Surfaces with Switchable Adhesion**
A. DEL CAMPO, Max-Planck-Institut für Metallforschung, Stuttgart, Germany

E-1.3: IL05 **Deployable Structures in Plants**
HIDETOSHI KOBAYASHI, Osaka University, Toyonaka, Japan

E-1.3: L06 **A Bat-wing Aircraft Using the Smart Joint Mechanism**
J. MANZO, E. GARCIA, Cornell University, Ithaca, NY, USA

E-1.3: L07 **Analysis and Optimization-based Synthesis of Compliant Mechanisms**
A. HASSE, F.L. CAMPANILE, Empa, Zürich, Switzerland

Session E-2
Biomimetic Materials

E-2.1 Bio-inspired and Bio-enabled Materials

E-2.1: IL01 **Two-dimensional Crystallization of Proteins on Lipid Surfaces**
A.R. BRISSON, N. ARRAUD, R. BERAT, A. BOUTER, B. GARNIER, C. GOUNOU, J. LAI-KEE-HIM, S. TAN, University of Bordeaux, Talence, France

E-2.1: L02 **Nonlinear Self-excited Oscillation of a Synthetic Ion Channel-inspired Nano-actuation Membrane**
TAKEO YAMAGUCHI[1, 2], TAICHI ITO[1], HIDENORI OHASHI[2], NAOKO MIYAOI[2], YUMI OGINO[2], [1]Tokyo Institute of Technology, Yokohama, Japan; [2]University of Tokyo, Tokyo, Japan

E-2.1: L03 **Fractals to Model Hierarchical Biomaterials**
A. CARPINTERI, N. PUGNO, A. SAPORA, Politecnico di Torino, Torino, Italy

E-2.1: IL04 **From Structural DNA Nanotechnology to NMR Membrane Protein Structure**
W.M. SHIH, Harvard Medical School and Dana-Farber Cancer Institute, Boston, MA, USA

E-2.1: L05 **Synthetic Biology: Olfactory Receptors in Artificial Membranes**
R. ROBELEK[1], E. LEMKER[3], B. WILTSCHI[3], V. KIRSTE[1], T. LASSER[2], M. LEUTENEGGER[2], D. OESTERHELT[3], E. SINNER[1], [1]Max-Planck-Institute for Polymer Research, Mainz, Germany; [2]EPFL, Lausanne, Switzerland; [3]Max-Planck-Institute for Biochemistry, Martinsried, Germany

E-2.1: IL06 **Study on Morph-genetic Materials Derived from Natural Materials**
D. ZHANG, T.X. FAN, L.H. SU, S.M. ZHU, J.J. GU, J. DING, Shanghai Jiaotong University, Shanghai, China

E-2.1: L07 **Functional Surfaces in Biology - Mechanisms and Applications**
S.N. GORB, Max-Planck-Institute for Metals Research, Stuttgart, Germany

E-2.1: L08 **Design Strategies for Hard Biomaterials in Marine Shells. Examples from the Phylum Brachiopoda**
E. GRIESSHABER, W.W. SCHMAHL, C. MERKEL, A. GÖTZ, Ludwig Maximilian University, Munich, Germany

E-2.1: L09 **New Fabrication Process of Nano-composites by Biomimetic Approach**
MITSUYO OKAMOTO, E. IWAI, H. HATTA, The Institute of Space and Astronautical, Kanagawa, Japan; H. KOHRI, I. SHIOTA, Kogakuin University, Tokyo, Japan

E-2.1: L10 **Gecko-inspired Suit Could Have you Climbing the Wall**
N. PUGNO, Politecnico di Torino, Torino, Italy

E-2.1: L11 **A Beetle-inspired Solution for Underwater Adhesion**
M. VARENBERG, S. GORB, Max-Planck-Institute for Metals Research, Stuttgart, Germany

E-2.2 Bio-inspired Manufacturing

E-2.2: IL01 **Biomimetic Materials Processing**
OSAMU TAKAI, Nagoya University, Nagoya, Japan

E-2.2: IL02 **Recombinant Spider Silk - Remodelling a Fascinating Biomaterial**
T. SCHEIBEL, University of Bayreuth, Bayreuth, Germany

E-2.2: L03 **Bio-Inspired Nanofabrication of Semiconductors and Dynamically Adaptive Optical Materials**
D.E. MORSE, University of California, Santa Barbara, CA, USA

Session E-3
Bio-inspired Sensors and Actuators

E-3.1 Sensors

E-3.1: L01 **Remote Electrical Sensing: Object Detection and Analysis Inspired by Electric Fishes**
G. VON DER EMDE, A. PADBERG, University of Bonn, Bonn, Germany

E-3.1: L02 **Towards Biocompatible Sensing Devices: an IPMC Based Artificial Vestibular System**
C. BONOMO, L. FORTUNA, S. GRAZIANI, D. NICOLOSI, G. SICURELLA, Universita' degli Studi di Catania, Catania, Italy; M. LA ROSA, STMicroelectronics, Catania, Italy

E-3.1: L03 **Magnetic Field Sensing by Magnetotactic Bacteria and Elasticity of Cytoskeleton**
K. ERGLIS, A. CEBERS, University of Latvia, Riga, Latvia

E-3.1: IL04 **Bioelectronic Detection Schemes for Biomedical and Environmental Sensing**
A. OFFENHÄUSSER, Forschungszentrum Jülich, Jülich, Germany

E-3.1: L05 **Double Layer Sensors Reproducing Perception Dynamics of Olfactory Cells**
A. MACAGNANO[1], E. ZAMPETTI[1], B.R. PISTILLO[2], A. BEARZOTTI[1], S. PANTALEI[1], R. D'AGOSTINO[2], [1]IMM-CNR, Rome, Italy; [2]Università di Bari, Bari, Italy

E-3.1: L06 **Determining the Binaural Signals in Bat Echolocation**
T. PAPADOPOULOS, R. ALLEN, University of Southampton, Southampton, UK

E-3.1: L07 **Generating Bio-Analogous Recognition in Artificial Materials - Sensors and Electronic Noses for Odours**
P.A. LIEBERZEIT, A. REHMAN, B. NAJAFI, F.L. DICKERT, University of Vienna, Vienna, Austria

E-3.2 Actuators

E-3.2: IL01 **A pH-driven DNA Nanoswitch Array**
DEJIAN ZHOU, University of Leeds, Leeds, UK

E-3.2: L02 **Novel Biochemical Powered Actuators with an Intelligent Organic Engine**
Y. WAKABAYASHI, T. OKAMOTO,H. KUDO, H. SAITO, KOHJI MITSUBAYASHI, Tokyo Medical & Dental University, Tokyo, Japan

E-3.2: L03 **A Bio-inspired MRF/Foam Actuator**
J.J. LARSEN, C.H. JENKINS, Montana State University, Bozeman, USA; U.A. KORDE, South Dakota School of Mines and Technology, USA

E-3.2: L04 **A pH-activated Biomimetic Actuator Derived from McKibben Artificial Muscle Structure**
B. TONDU, R. EMIRKHANIAN, S. MATHÉ, A. RICARD, University of Toulouse, Toulouse, France

Session E-4
Biologically Inspired Systems, and Robotics

E-4.1 Systems

E-4.1: IL01 **Towards In Vivo Nanomachines**
E. FRIEDRICHS, R. JUNGMANN, A. TSOKOU, S. RENNER, F. C. SIMMEL, Technical University Munich, Garching, Germany

E-4.1: IL02 **Morphing Aircraft in Perching Maneuvers**
E. GARCIA, A. WICKENHEISER, J. DIETL, J. MANZO, Cornell University, Ithaca, NY, USA

E-4.1: IL03 **Bio-inspired Control Architectures for Multi-functional Autonomous Robots**
F. KIRCHNER, University of Bremen, Bremen, Germany

E-4.2 Robotics

E-4.2: IL01 **Biologically Inspired Underactuated Robot Locomotion**
FUMIYA IIDA, MIT, Cambridge, MA, USA

E-4.2: IL02 **Modeling of Human-like Fast Reaching Movements in Dynamic Environments**
M. SVININ, I. GONCHARENKO, S. HOSOE, Riken, Nagoya, Japan, and 3D Inc., Japan

E-4.2: IL03 **Neuromimetic Robots Inspired by Insects' Visuomotor Control Systems**
N. FRANCESCHINI, S. VIOLLET, F. RUFFIER, J. SERRES, CNRS & University of the Mediterranean, Marseille, France

E-4.2: L04 **CPG Control of a Tensegrity Structure**
T.K. BLISS, T. IWASAKI, H. BART-SMITH, University of Virginia, Charlottesville, VA, USA

E-4.2: L05 **A Lightweight Autonomous Climbing Robot Based on an Active Vortex Suction Cup**
C. BRUNO, D. LONGO, G. MUSCATO, University of Catania, Catania, Italy

E-4.2: IL06 **Biorobots, Nonlinear Dynamics and Perception**
P. ARENA, University of Catania, Catania, Italy

E-4.2: IL07 **On Human Interactive Adaptive Robotics**
ZHIWEI LUO, Kobe University, Kobe, Japan

E-4.2: L08 **Anthropomorphic Talking Robot Based on Human Biomechanical Structure**
KOTARO FUKUI, YUMA ISHIKAWA, EIJI SHINTAKU, MASAAKI HONDA, ATSUO TAKANISHI, Waseda University, Tokyo, Japan

E-4.2: L09 **Cyborg MAVs Using Power Harvesting and Behavioral Control Schemes**
T. REISSMAN, E. GARCIA, Cornell University, Ithaca, NY, USA

E-4.3 Micro and Nano Systems

E-4.3: IL01 **Structural DNA Nanotechnology: Robots and Arrays**
N.C. SEEMAN, New York University, New York, NY, USA

E-4.3: IL02 **Biomimetic MEMS and NEMS Sensing**
M. MADOU, UC Irvine, Irvine, CA, USA

E-4.3: IL03 **DNA Computing and Robotics**
M.N. STOJANOVIC, Columbia University, Fort Lee, NJ, USA

Session E-5
Ongoing Applications and Perspectives

E-5: IL01 **Enzyme-catalyzed Assembly of DNA Hydrogels and Drug Delivery**
DAN LUO, Cornell University, Ithaca, NY, USA

E-5: IL02 **Hybrid Structures Composed of Photosynthetic System and Metal Nanoparticles: Plasmon Enhancement Effect**
A.O. GOVOROV, Ohio University, Athens, OH, USA

E-5: IL03 **Surface Biomimetic Investigation and Some Applications for Terrain Machines**
REN LU-QUAN, LI JIAN-QIAO, HAN ZHI-WU, Jilin University, Changchun, P.R. China

E-5: IL04 **Designer DNA Architectures for Nanobio-technology**
HAO YAN, Arizona State University, Tempe, AZ, USA

SPECIAL SESSION E-6
Biomimetic Flow Control in Aquatic Systems and its Application to Bioinspired Autonomous Underwater Vehicles

E-6: IL01 **Some Contributions of Flow Visualization and CFD Modeling to Understanding of how Fishes Swim**
M.S. GORDON, A.M. WIKTOROWICZ, University of California, Los Angeles, CA, USA

E-6: IL02 **Vortex Method for the Analysis of Complex, Unsteady and Vortical Flows Around a Swimming Fish**
KYOJI KAMEMOTO, AKIRA OJIMA, Yokohama National University, Yokohama, Japan

E-6: IL03 **High Fidelity Modeling of the Hydrodynamics of Swimming**
R. MITTAL, The George Washington University, Washington, DC, USA

E-6: IL04 **Applying Biomechanics to Swim Better**
P.R. BANDYOPADHYAY, Naval Undersea Warfare Center, Newport, Rhode Island, USA

E-6: IL05 **Evolutionary Optimization of Anguilliform Swimming**
P. KOUMOUTSAKOS, P. CHATELAIN, ETH Zurich, Zurich, Switzerland

E-6: IL06 **An Exploration of Passive and Active Flexibility in Biolocomotion Through Analysis of Canonical Problems**
J.D. ELDREDGE, University of California, Los Angeles, CA, USA

E-6: IL07 **Modeling the Dynamics of Human Swimming**
MOTOMU NAKASHIMA, Tokyo Institute of Technology, Tokyo, Japan

E-6: IL08 **Geometric Mechanics and Aquatic Locomotion Through Vortex Shedding**
S.D. KELLY, University of North Carolina, Charlotte, NC, USA

E-6: IL09 **Vortex Rings in Bio-inspired and Biological Jet Propulsion**
P.S. KRUEGER, Southern Methodist University, Dallas, TX, USA

E-6: IL10 **Probing the Hydrodynamics of Fish-like Swimming via Numerical Simulation: Recent Insights and Future Challenges**
I. BORAZJANI, F. SOTIROPOULOS, University of Minnesota, Minneapolis, MN, USA

E-6: IL11 **Fluid-structure Interactions in Pelagic Trawls and Probable Consequences for the Selectivity of the Fishing Gear**
M. PASCHEN, H.-J. WINKEL, H. KNUTHS, University of Rostock, Rostock, Germany

E-6: IL12 **Rheo- and Chemo-Sense Strategies for Plume-Tracking Behavior of Lobster-Inspired Robots in Turbulent Flows**
F.W. GRASSO, City University of New York, Brooklyn, NY, USA

E-6: IL13 **Biomechanics in Swimming: from Hydrodynamic Propulsion to Dynamic Maneuverability**
HAO LIU, Chiba University, Chiba, Japan

E-6: IL14 **Biologically Inspired Control Surfaces and Propulsors for Underwater Vehicles**
A.H. TECHET, M.J. STANWAY, MIT, Cambridge, MA, USA

E-6: IL15 **Hammerhead: A Vision-guided AUV**
R.L. ALLWOOD, Cranfield University, Cranfield, Bedfordshire, UK

E-6: IL16 **Bio-inspiration and Implementation of a Soft Undulatory Swimming Robot**
B.L. STOIMENOV, RIKEN, Nagoya, Japan; J.M. ROSSITER, University of Bristol, Bristol, UK; Y. NAKABO, AIST, Tsukuba, Japan; T. MUKAI, RIKEN, Nagoya, Japan

E-6: IL17 **Robustness of Biomimetic Underwater Vehicles under Disturbances**
NAOMI KATO, HIROYOSHI SUZUKI, Osaka University, Suita, Osaka, Japan

E-6: IL18 **Autonomous Underwater Vehicle with Bioinspired Periodic Propulsion**
D. WEIHS, Technion-Israel Institute of Technology, Haifa, Israel

FOCUSED SESSION

Artificial Muscle Actuators Using Electroactive Polymers

A joint Session with Symposium A

See page 17

POSTER PRESENTATIONS

SYMPOSIUM A
SMART MATERIALS AND MICRO/NANOSYSTEMS

A-1: P01 **Domain Formation in Heteroepitaxial Lead Titanate Films Fabricated by Hydrothermal Epitaxy Below Curie Temperature**
SEHYOUNG AHN, S.K. CHOI, Korea Advanced Institute of Science and Technology, Daejeon, Korea

A-1: P02 **Study of Langasite crystal Micro-resonators Using the Length-extension Mode: Temperature-compensated Cuts and Applications to Atomic Force Microscopy**
G. DOUCHET, F. STHAL, T. LEBLOIS, E. BIGLER, C. TELLIER, R. BOURQUIN, Femto-ST, UMR CNRS, Besançon, France

A-1: P03 **Magnetic Temperature Transducers Made from Copper Based Soft Ferrite**
C. MICLEA, C. TANASOIU, C.F. MICLEA, M. CIOANGHER, National Institute for Materials Physics, Magurele - Bucharest, Romania; C. PLAVITU, I. SPANULESCU, C.T. MICLEA, Hyperion University, Bucharest, Romania

A-1: P04 **Ferroelectric and Magnetic Properties of Fe Doped PZT Nanoparticles**
P. SMITHA, P.K. PANDEY, S. KURIAN, N.S. GAJBHIYE, Indian Institute of Technology, Kanpur, India

A-2: P05 **Rapid Shrinking of Porous Hydrogel Prepared by Ice Templating**
ERI UMEBAYASHI, WAKAAKI MURAI, KAZUHO SUGURO, TOMOHIRO MOROHOSHI, TSUKASA IKEDA, NORIHIRO KATO, Utsunomiya University, Utsonomiya, Japan

A-2: P06 **Preparation of Microporous, Thermosensitive Organic-inorganic Hybrid Hydrogel with Simultaneous Control of Phase Separation and Sol-gel Process**
IKU SAKUHARA, ERI UMEBAYASHI, KAZUHO SUGURO, WAKAAKI MURAI, TOMOHIRO MOROHOSHI, TSUKASA IKEDA, NORIHIRO KATO, Utsunomiya University, Utsonomiya, Japan

A-2: P07 **Synthesis and Characterization of Polypyrrole on Anodic Ta2O5 Films**
V. FIGA', F. DI QUARTO, Università di Palermo, Palermo, Italy

A-2: P08 **Piezoelectric Enhancement of PVDF Films by Internal Bubbles Shape**
D. SUWANSUMPAN, H. MANUSPIYA, Chulalongkorn University, Bangkok, Thailand; A.S. BHALLA, The Pennsylvania State University, USA

A-2: P09 **Dielectrophoresis Force and the Electromechanical Responses of Elastomers**
R. KUNANURUKSAPONG, A. SIRIVAT, Chulalongkorn University, Bangkok, Thailand

A-4: P10 **Nano-lanthanum Titanate Particle Based Electrorheological Fluid with High Yield Stress**
RONG SHEN, XUEZHAO WANG, YANG LU, GANG SUN, KUNQUAN LU, Institute of Physics, Chinese Academy of Sciences, Beijing, China

A-5: P11 **Investigation of Sol-Gel Multifunctional Al2O3-La2O3 /Silica Nanocomposites on Al Alloys for Corrosion Protection**
A.R. PHANI, S. SANTUCCI, University of L'Aquila, L'Aquila, Italy

A-5: P12 **Formation of Highly Transparent SiCN Films Prepared by HWCVD**
AKIRA IZUMI, TAKASHI NAKAYAMADA, Kyushu Institute of Technology, Fukuoka, Japan

A-5: P13 **Electrical Conductivity Responses of PEDOT-PSS/ Zeolite Composite**
P. CHANTHAANONT, A. SIRIVAT, Chulalongkorn University, Bangkok, Thailand

A-5: P14 **Miscibility, Isothermal Crystallization / Melting Behavior, and Morphology of Poly(trimethylene terephthalate) / Poly(buthylene terephthalate) Blends**
P. KRUTPHUN, P. SUPAPHOL, Chulalongkorn University, Bangkok, Thailand

A-5: P15 **Non-isothermal Crystallization Kinetics and Melting Behavior of Thermoplastic / Liquid Crystalline Polymer Blends of Poly(trimethylene terepthalate) / Vectra A950**
P. PENWISA, R. MAGARAPHAN, The Petroleum and Petrochemical College, Bangkok, Thailand

A-5: P16 **Sulfonated Poly(ether ether ketone)(S-PEEK) as Derived from Bisphenol-S for PEM**
S. CHANGKHAMCHOM, A. SIRIVAT, The Petroleum and Petrochemical College, Bangkok, Thailand

A-5: P17 **Two-layer Radar Absorbing Structures Composed of Carbon Black and Carbon Fiber Composites**
SANG-YOUNG KIM, SUNG-SOO KIM, Chungbuk National University, Cheongju, Korea

A-5: P18 **Surface Coated Magnetic Nanoparticles in Biocompatible Colloidal Systems and Composites**
D. BICA, Romanian Academy-Timisoara Division, Timisoara, Romania; E. TOMBÁCZ, A. HAJDÚ, E. ILLÉS, University of Szeged, Szeged, Hungary; R. TURCU, National R&D Institute for Molecular & Isotopic Technologies, Cluj-Napoca, Romania; F. DUMITRACHE, I. MORJAN, National R&D Institute for Physics of Lasers, Plasma&Radiation, Bucharest, Romania; L. VÉKÁS, Romanian Academy-Timisoara Division, Timisoara, Romania

A-5: P19 **High Colloidal Stability Magnetic Fluids for Dynamic Sealing Applications**
D. BICA, L. VÉKÁS, Romanian Academy, Timisoara Branch, Timisoara, Romania; M.V. AVDEEV, Frank Laboratory of Neutron Physics, JINR Dubna, Russia; N.C. POPA, Romanian Academy, Timisoara Branch, Timisoara, Romania; A. HAN, Univ. Politehnica Timisoara, Timisoara, Romania; R. TURCU, National R&D Institute for Molecular and Isotopic Technologies, Cluj-Napoca, Romania; I. BORBÁTH, ROSEAL Co., Odorhei, Romania

A-5: P21 **Synthesis of Carbon Nanofibers as Support Layer for Metal Catalysts in a Microreactor for Three-phase Reactions**
D.B. THAKUR, K. SESHAN, L. LEFFERTS, University of Twente, Enschede, The Netherlands; R.M. TIGGELAAR, J.G.E. GARDENIERS, University of Twente, Enschede, The Netherlands

A-5: P22 **Multifunctional Nanocomposite Transparent UV-blocking Films Synthesized by the Sol-gel Process for Optical, Automotive and Aeronautic Applications**
A.R. PHANI, A. FUSARI, S. SANTUCCI, INFM and University of L'Aquila, L'Aquila, Italy

A-5: P23 **Functionalized Conducting Polymer-Magnetic Nanoparticles Hybrid Nanocomposites with Tailored Electrical and Magnetic Properties**
R. TURCU, A. NAN, O. PANA, I.TURCU, I. CRACIUNESCU, C.V.L. POP, I. BRATU, National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj-Napoca, Romania; J. LIEBSHER, Humbold-Universitat Berlin, Berlin; D. BICA, L. VEKAS, Romanian Academy-Timisoara Division, Romania

A-5: P24 **Smart Properties of an Irradiated High-Tc Superconductor**
A. BALOGH, I. KIRSCHNER, G. KOVACS, Eotvos University, Budapest, Hungary

A-6: P25 **Hybrid Organosilica Materials with Biphenyl Bridging Group**
E.R. MAGDALUYO, Jr., University of the Philippines, Quezon City, Philippines; E.V. CASTRICIONES, University of the Philippines, Quezon City, Philippines; R.V. RIVERA, Mariano Marcos State University, Ilocos Norte, Philippines; H.D. MENDOZA, University of the Philippines, Quezon City, Philippines

A-7: P26 **Encapsulation of High Dielectric Constant Particles via Miniemulsion Polymerization**
D.M. OPRIS, D. CRESPY, M. MOLBERG, C. LÖWE, F. NÜESCH, Empa, Swiss Federal Institute for Materials Testing and Research, Dübendorf, Switzerland

A-7: P27 **Four Growth Modes of Nano/Micro-sized Ge2Sb2Te5 Crystal by the Electrical Pulse Induced Evaporation Method**
S.K. CHOI, H.J. KIM, Korea Advanced Institute of Science and Technology, Daejeon, Korea

A-7: P28 **Synthesis and Characterization of Nanoparticles Strengthened LIGA Ni**
XUEYONG WEI, KYLE JIANG, University of Birmingham, Birmingham, UK

A-7: P29 **Low Temperature Growth of ZnO Nanorods by Chemical Bath Method**
P. HARI, M. BAUMER, D. SPENCER, D. TEETERS, University of Tulsa, Tulsa, USA

A-7: P30 **Intelligent Hydrogel Coatings on Magnetic Iron Oxide Nanoparticles**
R. FRIMPONG, J.Z. HILT, University of Kentucky, Lexington, KY, USA

A-7: P31 **Characterization of Solvated Modified Natural Rubber Based Polymer Electrolytes for Lithium-ion Batteries**
R. IDRIS, N.H. NAINA MOHD, SIRIM Berhad, Kulim, Malaysia

A-7: P32 **Gas Sensing Characteristics of Catalyst-loaded WO3/SnO2 Based Thick Films Gas Sensor for Volatile Organic Compounds (VOCs)**
JAE-MOK JUN, KYUNG-JIN CHOI, YOUNG-HO PARK, CHANG-SEOP LEE, Keimyung University, Daegu, and Jinju International University, Korea

A-7: P33 **Characteristics of TiO2/SnO2 Thick Film Gas Sensor Added by Metals (Pd, Pt, In, Ru and Rh) for Trimethylamine Gas**
JI-YOUNG JUNG, JAE-MOK JUN, CHANG-SEOP LEE, Keimyung University, Daegu, Korea

A-7: P34 **High Dielectric Composite Material at Microwave Frequency Range**
N. KRUESON, H. MANUSPIYA, Chulalongkorn University, Bangkok, Thailand; HATSUO ISHIDA, Case Western University, USA

A-7: P35 **Inorganic Mesoporous Membrane for PEMFC**
T. KUANCHAITRAKUL, H. MANUSPIYA, Chulalongkorn University, Bangkok, Thailand

A-7: P36 **Multifunctional Complex Materials with Nanometric Structure and Controlled Characteristics for Special Destination**
I. NEDELCU, SC Prelucrari Metalurgice SRL; I. CARCEANU, A. POPA, Metallurgical Research Institute of Bucharest; G. COSMELEATA, Politehnica University of Bucharest, Bucharest, Romania

A-7: P37 **Microstructure Characterization of Si3N4-TaC Based Composites**
A.C. DE SOUZA COUTINHO, J.C. BRESSIANI, A.H. DE ALMEIDA BRESSIANI, IPEN, Sao Paulo, Brazil

A-7: P38 **A New Synthesis Route to Prepare Polyaniline (PANI) Nanotubes Containing Magnetic Nanoparticles**
A.C.V. DE ARAUJO, S. ALVES Jr., W.M. AZEVEDO, Universidade Federal de Pernambuco, Recife, PE, Brazil

A-7: P39 **Investigation of Metal Effect on Gas-sensing Properties of Nanostructured Films Based on Novel Polyphthalocyanines**
O.M. IVANOVA, A.G. BORISOV, S.A. KRUTOVERTSEV, JSC "Practic-NC", Zelenograd, Moscow, Russia; A.I. SHERLE, E.F. OLEINIK, Institute of Chemical Physics of RAS, Moscow, Russia

A-7: P40 **Nanostructured Films Based on Polyoxometalates for Chemical Gas Sensors**
S.A. KRUTOVERTSEV, A.E. TARASOVA, L.S. KRUTOVERTSEVA, O.M. IVANOVA, JSC "Practic-NC", Zelenograd, Moscow, Russia

A-7: P41 **First Molecular Conductors with Cobalt Bis(dicarbollide) Anion and its Derivatives**
O. KAZHEVA[1], A. CHEKHLOV[1], G. ALEXANDROV[2], A. KRAVCHENKO[3], V. STARODUB[3], I. SIVAEV[4], V. BREGADZE[4], L. BURAVOV[1], O. DYACHENKO[1], [1]Institute of Problems of Chemical Physics, Chernogolovka, Russia; [2]N.S.Kurnakov Institute of General and Inorganic Chemistry, Moscow, Russia; [3]Kharkov National University, Kharkov, Ukraine; [4]A.N.Nesmeyanov Institute of Organoelement Compounds, Moscow, Russia

A-7: P42 **Modulation of the Metallic Oxide Properties Through Techniques of Soft Chemistry for Several Applications**
D.C. ALTAMIRANO-JUAREZ, Sierra Sur University, Miahuatlan de Porfirio Diaz, Oaxaca, Mexico

A-7: P43 **Effects of Thermal Annealing on CdSe Nanocrystal Films**
M. ZAFAR IQBAL, Quaid-i-Azam University, Islamabad, Pakistan and University of Central Florida, Orlando, FL, USA; LIU LIEWEI, S.I. KHONDAKER, University of Central Florida, Orlando, FL, USA

A-8: P44 **The Mechanical Behaviour of Silicon Diaphragm for Micromachined Capacitive Pressure Sensor**
J. REN, D. CHENELER, M.C. WARD, University of Birmingham, Birmingham, UK; P.K. KINNELL, GE Infrastructure Sensing, Leicester, UK

A-8: P45 **GaAs Resonant and Non Resonant Micro-sensors: Design and Simulations**
C.R. TELLIER, Femto-st Institute, Besançon, France; S. DURAND, LAUM, Le Mans, France

A-8: P46 **Thin Film YBCO Pixels for MMW Detector**
E. ZAKAR, D. WIKNER, M. DUBEY, P. AMIRTHARAJ, U.S. Army Research Laboratory, Adelphi, MD, USA

A-8: P47 **Micromask Generation for Polymer Morphology Control: Nanohair Fabrication for Synthetic Dry Adhesives**
D. SAMEOTO, C. MENON, YASONG LI, Simon Fraser University, Burnaby, BC, Canada

A-8: P48 **A Survey of Nanolithographic Techniques Used to Create Nanostructures**
N.J. VAN SUETENDAEL, S. EARLES, M.H. McCAY, Florida Institute of Technology, Melbourne, FL, USA

A-8: P49 **Wet Etching of Si and GaAs Micro-arrays: Experimental and Theoretical Shapes**
T. LEBLOIS, Institute FEMTO-ST, Besançon cedex, France

A-8: P50 **Diamond-like Carbon Film Based MEMS Switches for RF Systems**
E.A. ILHITSHEV, V.A. VLASENKO, S.N. BELIAEV, A.V. GORIACHEV, A.G. EFIMOV, E.A. POLTORATSKI, A.F. POPKOV, State Scientific and Research Institute of Physical Problems, Moscow, Russia; M.D. MALENKOVITSH, M.L. SHUPEGIN, Moscow Inst.of Steel and Alloys, Russia; G.V. FROLOVA, Moscow Inst.of Electr. Engineering, Russia

A-8: P51 **An Improved Highly Sensitive Miniature Accelerometer Using a Hall-effect Sensor and a Displacement-amplifying Compliant Mechanism**
ARUNBALAJI BASKAR, National Institute of Technology, Trichy, India

Special Session A-9
Recent Development in Electrical Writable Organic Memory Devices

A-9: P52 **Fabrication and Characterisation of MIS Organic Memory Devices**
M.F. MABROOK, D. KOLB, C. PEARSON, D.A. ZEZE, M.C. PETTY, University of Durham, Durham, UK

A-9: P53 **Gold Nanoparticle Based Electrically Rewritable Polymer Memory Devices**
D.C. PRIME, S. PAUL, De Montfort University, Leicester, UK

A-9: P54 **Electrically Re-writable Non-volatile Memory Device - Using a Blend of Sea Salt and Polymer**
I. SALAORU, S. PAUL, De Montfort University, Leicester, UK

A-9: P55 **Effect of Varying Memory Device Architectures on the Electrical Properties of P(VDF/TrFE) (72/28) Copolymer Thin Film**
CHANG WOO CHOI, Korea High Tech Textile Research Institute (KOTERI), Gyeonggi-do, South Korea; A. ANAND PRABU, SUN YOON, KAP JIN KIM, Kyung Hee University, Gyeonggi-do, South Korea

A-9: P56 **Negative Differential Resistance and Memory Effects in Organic Diodes**
JIAN LIN, DONGGE MA, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun, P.R. China

Focused Session A-10
State-of-the-art Research and Application of SMAs Technologies

A-10.1: P57 **Magnetic Properties and Microstructures of Rapidly Solidified FePd Alloy Ribbons**
YOICHI KISHI, ZENJIRO YAJIMA, Kanazawa Institute of Technology, Japan; TEIKO OKAZAKI, YASUBUMI FURUYA, Hirosaki University, Japan; M. WUTTIG, University of Maryland, USA

A-10.1: P58 **Magnetoelastic Study of Ni2MnGa Shape Memory Alloys in Pulsed Fields up to 30 T**
F. ALBERTINI, F. CASOLI, IMEM-CNR, Parma, Italy; P.A. ALGARABEL, L. MORELLON, M.R. IBARRA, Universidad de Zaragoza-CSIC, Zaragoza, Spain; A.M. PEREIRA, Universidade do Porto, Porto, Portugal; V. KOLEDOV, V. KHOVAILO, V. SHAVROV, Institute Radioengineering and Electronics - RAS, Moscow, Russia

A-10.1: P59 **Influence of Substrate Temperature on Texture for TiNi Sputtered Films**
NORIAKI IKENAGA, YOICHI KISHI, ZENJIROYAJIMA, NORIYUKI SAKUDO, Kanazawa Institute of Technology, Hakusan, Ishikawa, Japan

A-10.2: P60 **Shape Recovery and Epsilon Martensite to Austenite Transformation in a Fe29Mn7Si5Cr Shape Memory Alloy**
N. VAN CAENEGEM[1], K. VERBEKEN[1, 2], R. PETROV[1], N.M. VAN DER PERS[3], Y. HOUBAERT[1], [1]Ghent University, Ghent, Belgium; [2]Max-Planck-Institut fur Eisenforschung, Düsseldorf, Germany; [3]Delft University of Technology,Delft, The Netherlands

A-10.2: P61 **Thermal and Shape Memory Phenomena in Copper Based Beta Phase Alloys**
O. ADIGUZEL, Firat University, Elazig, Turkey

A-10.2: P62 **The Influence of Thermomechanical Treatment on Transformation Temperatures of Cu-Al-Ni Shape Memory Alloys**
A.A.M. TADEU, C.R.V. ANA, J.G.L. SEVERINO, M.G. RODINEI, Federal University of Paraíba, Joao Pessoa, Paraíba, Brazil

A-10.2: P63 **Pseudoelasticity of Cu-13.8Al-Ni Alloys Containing V and Nb**
M.G. RODINEI, C.R.V. ANA, J.G.L. SEVERINO, A.A.M. TADEU, Federal University of Paraíba, Joao Pessoa, Paraíba, Brazil

A-10.2: P64 **Multi-stage Martensitic Transformations in Ti - 50.0 at.% Ni Alloy Induced by Thermal Cycles**
S. BELYAEV, N. RESNINA, Saint-Petersburg State University, Saint-Petersburg, Russia

A-10.2: P65 **Dynamic and Static Displacements of Atoms in B2-phase of TiNi Alloy**
V.M. GUNDYREV, V.I. ZEL'DOVICH, Institute of Metal Physics, Ural Division of Russian Academy of Sciences, Ekaterinburg, Russia

A-10.2: P66 **Decomposition of the Beta-solid Solution and Martensitic Transformation in Cu-Al-Mn Shape Memory Alloys**
I.V. KHOMSKAYA, V.I. ZELDOVICH, Institute of Metal Physics, Ural Division of Russian Academy of Sciences, Ekaterinburg, Russia

A-10.3: P67 **On Functional Behavior of Strain-aged TiNi Alloy**
E.P. RYKLINA, S.D. PROKOSHKIN, A.A. CHERNAVINA, N.N. PEREVOSHCHIKOVA, Moscow Institute of Steel and Alloys, Moscow, Russia

A-10.3: P68 **Pseudoelastic Effect as a Result of TMT and Mechanical Cycling in Overload Regime**
V.A. ANDREEV, A.B. BONDAREV, Industrial centre "MATEKS", Moscow, Russia; M.A. KHUSAINOV, A.A. LARIONOV, Yaroslav the Wise Novgorod State University, Veliky Novgorod, Russia

A-10.4: P69 **High Performance Composite Materials Created Through Advanced Techniques of Surface Engineering**
I. CARCEANU, A. POPA, Metallurgical Research Institute of Bucharest, Bucharest, Romania; G. DINESCU, INFLPR Magurele Bucharest, Romania; C. GEORGETA, Politehnica University of Bucharest, Romania

A-10.4: P70 **Fabrication and Characterization of Nanocrystalline SMA Thin Materials**
A.V. SHELYAKOV, A.M. GLEZER, A.A. KORNEEV, State University, Moscow, Russia

A-10.5: P71 **Fatigue Behavior of Ti-Ni Superelastic Component for Lumbago Prevent Apron**
KAZUHIRO KITAMURA, Nagano College of Technology, Nagano, Japan

A-10.5: P72 **Generation and Advantages of Initial Tension in SMA Coil Spring**
KWANG KOO JEE, J.H. HAN, Y. B. KIM, Korea Institute of Science and Technology, Seoul, Korea; D.H. LEE, International Metal Institute, Gyeonggi, Korea; W.Y. JANG, Chosun University, Gwangju, Korea

Focused Session A-11
Smart Textiles

A-11.1: P73 **PVDF Nanoweb Touch Sensors Prepared Using the Electro-spinning Process for Smart Apparels Applications**
SUN YOON, S. RAMASUNDARAM, KAP JIN KIM, Kyung Hee University, Yongin-si, South Korea

A-11.1: P74 **A Novel Method to Produce Durable Water Repellent Cotton**
S. TRAGOONWICHIAN, N. YANUMET, Chulalongkorn University, Bangkok, Thailand; E.A. O'REAR, University of Oklahoma, Oklahoma, USA

A-11.1: P75 **Production of Flame Retardant Cotton Fabric by Thin Film Coating**
A. SIRIVIRIYANUN[1], E.A. O'REAR[2], N. YANUMET[1], [1]Chulalongkorn University, Bangkok, Thailand; [2]University of Oklahoma, Norman, Oklahoma, USA

A-11.2: P76 **Contributions Regarding Convergent Systems of Monitoring Mobile Personalized Information**
E. CARPUS, A. DOROGAN, R. SCARLAT, INCDTP, Bucharest, Romania; M. IGNAT, INCDIE-CA, Bucharest, Romania; G. ONOSE; UMF, Bucharest, Romania

Focused Session A-12
A joint Session with Symposium E
Artificial Muscle Actuators Using Electroactive Polymers

A-12.1: P77 **Elastomeric Conductor-insulator Composite as Improved Actuator Material**
M. MOLBERG[1, 2], D.M. OPRIS[1], C. LÖWE[1], F.A. NÜESCH[1]; C.G. PLUMMER[2], Y. LETERRIER[2], [1]Empa, Swiss Federal Laboratories for Materials Testing and Research, Dübendorf, ZH, Switzerland; [2]EPFL, École Polytechnique Fédéral de Lausanne, Lausanne, VD, Switzerland

A-12.1: P78 **A Co-axial Dielectric Elastomer Actuator**
G. KOFOD, H. STOYANOV, R. GERHARD, University of Potsdam, Potsdam, Germany

A-12.1: P79 **A Closer Look at the Polyacrylamide Microfibers for Natural-Like Artificial Muscle Fabrication**
M. BASSIL, M. EL TAHCHI, J. DAVENAS, Lebanese University, Lebanon, and Université Claude Bernard - Lyon I, Villeurbanne, France

A-12.2: P80 **Experimental Methods to Investigate the Nano and Microelectromechanical Actuation in Polymeric Membrane**
G. ZARNESCU, M. IGNAT, E. HAMCIUC, C. HAMCIUC, National Institute for Electrical Engineering Research-Advanced Researches, Bucharest, Romania

SYMPOSIUM B
SMART OPTICS

B-1.1: P81 **Electrochromic Nickel Oxide-based Thin Films Deposited by Chemical Bath**
A. MENDOZA-GALVAN, M.A. VIDALES-HURTADO, Cinvestav, Queretaro, Qro., Mexico

B-1.1: P82 **WO3 Thin Films Active in the Infrared Region**
K. SAUVET[1, 2], L. SAUQUES[2], J. PERRIERE[3], O. DURAND[4], J-B. LEDEUIL[5], D. GONBEAU[5], A. ROUGIER[1], [1]Laboratoire de Réactivité et Chimie des Solides, Amiens, France; [2]DGA, Délégation Générale pour l'Armement, Arcueil cedex, France; [3]Université Paris 6, Paris, France; [4]UMR-FOTON, Rennes, France; [5]LCTPCM, UMR 5624, Pau Cedex, France

B-1.1: P83 **Acidochromic and Solvatochromic Fluorophores**
H. DETERT, S. GLANG, J. PREISS, V. SCHMITT, Johannes Gutenberg University Mainz, Mainz, Germany

B-1.2: P84 **Differences in Nonlinear Mesoscopical Magnetic Interactions between Achiral and Chiral Nitroxyl Radical Liquid crystals**
YOSHIAKI UCHIDA[1], RUI TAMURA[1], NAOHIKO IKUMA[1], SATOSHI SHIMONO[1], NODA YOHEI[1], JUN YAMAUCHI[1], YOSHIO AOKI[2], HIROYUKI NOHIRA[2], [1]Kyoto University, Kyoto, Japan; [2]Saitama University, Saitama Japan

B-1.3: P85 **Study of Stimulated Luminescent Processes in Beta Irradiated SrAl2O4: Eu2+, Dy3+**
M. PEDROZA-MONTERO[1], B. CASTANEDA[1], O. ARELLANO-TÁNORI[1], R. MELÉNDREZ[1], V. CHERNOV[1], W.M. YEN[2], M. BARBOZA-FLORES[1], [1]Universidad de Sonora, Hermosillo, Sonora, México; [2]University of Georgia, Athens, GA, USA

B-1.3: P86 **Optical and Structural Characterization of Erbium-doped Ion-implanted Tellurite Glasses for Active Integrated Optical Devices**
S. BERNESCHI[1], M. BRENCI[1], G. NUNZI CONTI[1, 2], S. PELLI[1], G.C. RIGHINI[1, 3], M. BETTINELLI[4], A. SPEGHINI[4], I. BÁNYÁSZ[5], M. FRIED[6], N.Q. KHANH[6], F. PÁSZTI[7], A. WATTERICH[5], A. LETO[8, 9], G. PEZZOTTI[8], A.A. PORPORATI[8, 9], [1]IFAC-CNR, Sesto Fiorentino (FI), Italy; [2]Centro Studi e Ricerche "Enrico Fermi", Roma, Italy; [3]CNR, Roma, Italy; [4]University of Verona, Verona, Italy; [5]Research Institute for Solid State Physics and Optics, HAS, Budapest, Hungary; [6]Research Institute for Technical Physics and Materials Science, HAS, Budapest, Hungary; [7]Research Institute for Particle and Nuclear Physics, HAS, Budapest, Hungary; [8]Ceramic Physics Lab. and Research Institute for Nanoscience, KIT, Kyoto, Japan; [9]CNR Kyoto Research Center, Kyoto, Japan

B-1.3: P87 **Light Emission of Multilayer Graded-band-gap Semiconductor Structures**
B.S. SOKOLOVSKY, Ivan Franko National University, Lviv, Ukraine

B-1.3: P88 **Lanthanide-organic Frameworks: Structure, Spectroscopy Studies**
M.O. RODRIGUES[1], F.A.A. PAZ[2], R.O. FREIRE[1], G.F. DE SÁ[1], A. GALEMBECK[1], S. ALVES Jr.[1], [1]Universidade Federal de Pernambuco, Recife, PE, Brazil; [2]Universidade de Aveiro,Aveiro, Portugal

B-1.4: P89 **Metamaterials with Tunable Refractive Index Fabricated from Nanoamorphous Microwires and Optical Circularly Polarized Effects**
V.A. IVANOV[a,b], A.N. SHALYGIN[b,c], V.Yu. GALKIN[b], A.V. IVANOV[c], K.N. ROZANOV[d], A.V. OSIPOV[d], D.A. PETROV[d], [a]N.S. Kurnakov Institute of General and Inorganic Chemistry of the RAS, Moscow, Russia; [b]R&P "Vichel (high-frequency systems)", Moscow, Russia; [c]M.V. Lomonosov Moscow State University, Moscow, Russia; [d]Institute for Theoretical and Applied Electromagnetics of the RAS, Moscow, Russia

B-1.5: P90 **Synthesis of Q-semiconductor Glass Nanocomposite for Photonic Application**
B.B. KALE, S.K. APTE, R.S. SONAWANE, M.V. KULKARNI, S.D. NAIK, J.D. AMBEKAR, R. MARIMUTHU, Centre for Materials for Electronics Technology (C-MET), Pune, India

B-1.5: P91 **Raman Scattering on Quadrupolar Vibrational Modes of Spherical Nanoparticles**
D. RISTIC, M. IVANDA, K. FURIC, Ruder Boskovic Institute, Zagreb, Croatia; M. MONTAGNA, Università di Trento and INFM, Povo, Trento, Italy; M. FERRARI, Instituto di Fotonica e Nanotecnologie, Trento, Italy; G.C. RIGHINI, IFAC - CNR, Firenze, Italy

B-2.1: P92 **Chromogenic Detection by Azocalix[4]arenes in a PPV Film**
A. ROUIS, H. BEN OUADA, Laboratoire de Physique et Chimie des Interfaces, Monastir, Tunisie; J. DAVENAS, I. BONNAMOUR, Universite de Lyon, Villeurbanne, France

B-2.1: P93 **Characterization of Brightness of Thin Film ZnS:Mn Electroluminescent Devices with Metal Oxide Precursors: SOG and TEOS**
SUNG MIN PARK, MUN JA KIM, SANG HYUN PARK, JIN YONG KIM, IN TACK HAN, JI-BEOM YOO, SungKyunKwan University, Suwon, Korea

B-2.1: P94 **Advanced Liquid Crystal Technology for Integrated Photonics**
A. MURAVSKY, V. CHIGRINOV, Hong Kong University of Science and Technology, Kowloon, Hong Kong

B-2.1: P95 **Humidity Influence on Gas-sensing Characteristics of Ammonia Sensor Films**
M.V. CHUPRIN, A.G. BORISOV, O.M. IVANOVA, S.A. KRUTOVERTSEV, JSC "Practic-NC", Zelenograd, Moscow, Russia

B-2.1: P96 **Synthetic Diamond OSL Dosimeters for Radiotherapy Applications**
M. BARBOZA-FLORES, R. MELENDREZ, V. CHERNOV, M. PEDROZA-MONTERO, S. PRECIADO-FLORES, Universidad de Sonora, Hermosillo, Sonora, Mexico

SYMPOSIUM C
EMBODING INTELLIGENCE IN STRUCTURES AND INTEGRATED SYSTEMS

C-1: P97 **A Self-sensing Method for IPMC Actuator**
BYUNG-GEUN KO, HYOK-CHON KWON, SONGJUN LEE, Hanyang University, South Korea

C-1: P98 **Magnetoelectric Sensor for In-Process Weld-quality Control and Monitor of Ultrasonic Plastic Welding**
KWOK FUNG CHEUNG, S.W. OR, Hong Kong Polytechnic University, Kowloon, Hong Kong, China

C-1: P99 **Preparation and Characterization of Styrene-Isoprene-Styrene Triblock Copolymer (SIS)/Polydiphenylamine Blends**
K. THONGSAK, A. SIRIVAT, Chulalongkorn University, Bangkok, Thailand

C-1: P100 **Electrical Conductivity of Poly(p-phenylene vinylene)/Zeolite Composites and Synergetic Interaction with NH4NO3**
J. KAMONSAWAS, A. SIRIVAT, Chulalongkorn University, Bangkok, Thailand

C-1: P101 **Structure Formation and Strengthening of Hot Deformed Nitrogen-Containing Steels**
V.G. PROKOSHKINA, L.M. KAPUTKINA, A.G. SVYAZHIN, Moscow Institute of Steel and Alloys, Moscow, Russia; J. SIWKA, Czestochowa University of Technology, Czestochowa, Poland

C-2: P102 **Piezoelectric Sensor System for Structural Health Monitoring**
BYUNGSOO KIM, YONGRAE ROH, Kyungpook National University, Daegu, Korea

C-3: P103 **Modeling, Identification, and Semi-active Control of a Large-scale Magnetorheological Fluid Damper**
A. RODRIGUEZ[1], N. IWATA[2], F. IKHOUANE[1], J. RODELLAR[1], [1]Universidad Politecnica de Catalunya, Barcelona, Spain; [2]Kinki University, Osaka, Japan

C-3: P104 **Theoretical-analysis and FEM Modeling of Piezoelectric Phased Array for SHM**
XINGANG LI[1], SUN YI[1], GUOZHI SONG[2], [1]Harbin Institute of Technology, Harbin, China; [2] University of London, London, UK

C-3: P105 **Vibration Suppression of Stiffened Plate with Piezoelectrics**
J. JUNG, JI-HWAN KIM, Seoul National University, Seoul, Korea

C-3: P106 **Edge to Thickness Ratio as a Predictor of Cured Shape and Load-deflection Characteristics in Cross-ply Asymmetric Composite Laminates**
P. GIDDINGS, C.R. BOWEN, H.A. KIM, University of Bath, Bath, UK

C-4: P107 **Wavelength Spectra of Fiber Optic Bragg Grating for Crack Opening**
IL-BUM KWON, GUOHUA JIN, NAM-KWON LEE, DAE-CHEOL SEO, KRISS, Daejeon, South Korea

C-4: P108 **Experimental Damage Detection in Smart Structures Using Lamb Waves**
V.R. FRANCO, D.D. BUENO, C.R. MARQUI, V.L. JUNIOR, FEIS/UNESP, Ilha Solteira, SP, Brazil

C-5: P109 **How Nanoparticles Should be Applied to Cultural Heritage Conservation**
G. TAGLIERI, V. DANIELE, R. QUARESIMA, University of L'Aquila, Monteluco di Roio, L'Aquila, Italy

C-5: P110 **Tunable Dielectric Resonator Antennas**
A. MAHANFAR, C. MENON, K. DAHESHPOUR, R.G. VAUGHAN, A. PARAMESWARAN, Simon Fraser University Burnaby, Canada; F. CARPI, University of Pisa, Pisa, Italy

SYMPOSIUM D
BIOMEDICAL APPLICATIONS OF SMART MATERIALS, NANOTECHNOLOGY AND MICRO / NANO ENGINEERING

D-1: P111 **Photoluminescence Response and Particle Size Control of CdSe Quantum Dots by Wet Chemical Synthesis for Biomedical Applications**
RONG-FUH LOUH, A.C.C. CHANG, REX WANG, C.H. HSIAO, Feng Chia University, Taichung, Taiwan

D-1: P112 **Dispersion and Biofunctionalization of Singlewall Carbon Nanotubes**
C. TRIPISCIANO, E. BOROWIAK-PALEN, A. BACHMATIUK, R.J. KALENCZUK, Szczecin University of Technology, Szczecin, Poland

D-1: P113 **Interaction of Protein with Nanostructured Films of Phthalocyanines**
A.G. BORISOV, O.M. IVANOVA, S.A. KRUTOVERTSEV, JSC "Practic-NC", Zelenograd, Moscow, Russia; M.Yu. RUBTSOVA, L.G. TOMILOVA, Moscow State University, Moscow, Russia

D-1: P114 **Poly(propylene carbonate): Bacterial and Cell Adhesion, and Biocompatibility and Biodegradability in Mice**
HEESOO KIM, IK JUNG KIM, JUNG RAN KIM, Dongguk University College of Medicine, Gyeongju, Korea; GAHEE KIM, MOONHOR REE, Polymer Research Institute, and Pohang University of Science and Technology, Korea

D-1: P115 **Preparation and Mechanical Characterization of Poly-lactic Acid for Application in Bone Fixation Systems**
A. OSPINA OREJARENA, E.V. MORENO RONDON, Chemical Engineering; L.E. FORERO, Science Materials, Floridablanca, Colombia

D-2: P116 **Photo-responsive Molecularly Imprinted Hydrogels for Paracetamol**
CHENGBIN GONG, Y.M. HO, M.H.W. LAM, City University of Hong Kong, Hong Kong, China

D-2: P117 **Methods for the Preparation of Intelligent Hydrogel Micro- and Nanostructures Using Microcontact Printing and ATRP**
HARI CHIRRA, J.Z. HILT, University of Kentucky, Lexington, KY, USA

D-2: P118 **SAW DNA Sensors for Lab-on-a-chip Applications**
YONGRAE ROH, TASAWAR NISAR, Kyungpook National University, Daegu, Korea

D-3: P119 **Artificial Control of the Bacterial Cell-to-cell Communication with Autoinducer Recognition Gel**
NORIHIRO KATO, YU OZONOE, ERI UMEBAYASHI, TOMOHIRO MOROHOSHI, TSUKASA IKEDA, Utsunomiya University, Utsunomiya, Japan

D-3: P120 **Ultrasonic Transducer for Fluid Microagitation Based on β-PVDF**
V.F. CARDOSO[1], J.G. ROCHA[1], S. LANCEROS-MENDEZ[2], G. MINAS[1], [1]University of Minho, Guimaraes, Portugal; [2] University of Minho, Braga, Portugal

D-3: P121 **Detection of DNA Molecules in Micro Fluidic Channels by Infrared Absorption Spectroscopy**
T. MIYOSHI, R. YAMAGUCHI, K. ISHIBASHI, K. MIYAMOTO, A HIRANO-IWATA, Y. KIMURA, MICHIO NIWANO, Tohoku University, Sendai, Japan

D-3: P122 **Biodosimetry of Gamma-irradiated Human Blood**
K. SANTACRUZ-GOMEZ, Departamento de Ciencias Químico-Biológicas, Hermosillo, Sonora, México; M. PEDROZA-MONTERO, R. MELENDREZ, B. CASTANEDA, D. SOTO-PUEBLA, M. BARBOZA-FLORES, Universidad de Sonora, Hermosillo, Sonora, México

D-4: P123 **Fabrication of Ti Fiber Scaffold for Biomaterial Use**
SHUNSUKE SAITO, Y. OYAKEA, T. ASAOKA, Tokyo Denki University, Saitama, Japan

D-4: P124 **Fabrication of α-TPC, HAp Functionally Graded Porous Beads**
YUJI KAJIHATA, T. GOTO, T. ASAOKA, Tokyo Denki University, Saitama, Japan; K.S. FURUKAWA, T. USHIDA, University of Tokyo, Tokyo, Japan ; T. TATEISHI, National Institute for Materials Science, Ibaraki, Japan

D-4: P125 **Addition of Surface Function to Zirconia for Biomaterial Use**
NATSUMI KOIDE, K. SUZUKI, M. TSUDA, T. ASAOKA, Tokyo Denki University, Saitama, Japan

D-5: P126 **Magnetic Hydrogel Nanocomposites for Remote Controlled Pulsatile Drug Release**
N. SATARKAR, J.Z. HILT, University of Kentucky, Lexington, KY, USA

D-5: P127 **Analysis of Magnetic Hydrogel Nanocomposites for Hyperthermia Applications**
S. MEENACH, K.W. ANDERSON, J.Z. HILT, University of Kentucky, Lexington, KY, USA

D-5: P128 **Electrical Field Responsive Polypyrole in Poly(acrylic acid) Hydrogel for Transdermal Drug Delivery**
P. CHANSAI, A. SIRIVAT, Chulalongkorn University, Bangkok, Thailand

D-5: P129 **Prepation and Characterization of Highly Water Soluble Pharmaceutical Loaded PLA Microcapsules**
D. LOCA[1], O. PUGOVICS[2], L. BERZINA-CIMDINA[1], J. LOCS[3], [1]Riga Technical University; [2]Latvian Institute of Organic Synthesis; [3]Riga Biomaterials Innovation and Development Centre, Riga, Latvia

D-5: P130 **Effect of Electric Field Strength on the Diffusion of Salicylic Acid Through Polyacrylamide Hydrogels**
S. NIAMLANG, A. SIRIVAT, Chulalongkorn University, Bangkok, Thailand

D-5: P131 **Micro- and Nanoparticles Loaded with Drugs and Proteins on the Base of Biocompatible and Biodegradable Polymer, Poly(3-hydroxybutyrate)**
A.P. BONARTSEV, V.V. VOINOVA, Moscow State University, Moscow, Russia; V.A. LIVSHITS, E.A. IVANOV, T.A. MAKHINA, V.L. MYSHKINA, A.P. BOSKHOMDZHIEV, G.A. BONARTSEVA, A.N.Bach's Institute of Biochemistry, RAS, Moscow, Russia; A.L. IORDANSKII, Joint Institute of Chemical Physics, RAS, Moscow, Russia

D-5: P132 **New Antibacterial, Antiadhesive Films Based on Layer by Layer Self Assemblies of Biodegradable PLGA/ Chitosan Polymers Containing Modified Tetraetherlipids**
E. DAYYOUB, J. SITTERBERG, U. BAKOWSKY, Philipps University of Marburg, Marburg, Germany

D-6: P133 **Fabrication of Magnetic Micro-machines for Low-invasive Surgery**
C.S. TROISI, M. KNAFLITZ , Politecnico di Torino, Torino, Italy; L. MARTINO, E. OLIVETTI, G. DURIN, INRIM, Torino, Italy

D-6: P134 **Estimate Biocompatibility and Injection-molding Processability**
JEONG-JUNG OAK, H. KIMURA, A. INOUE, Tohoku University, Sendai, Japan

D-6: P135 **Bone Implant Failure Detection Through a Piezo-active Network**
C.M. COSTA[1, 2], P.F. ROCHA[1], S. LANCEROS-MENDEZ[1], S.A. FILONOVICH[1], P. ALPUIM[1], J.G. ROCHA[3], C. FRIAS[4], A. TORRES MARQUES[4], R. SOARES[4], C. COSTA[4], [1]Universidade do Minho, Braga, Portugal; [2]CeNTI - Centre for Nanotech. and Smart Materials, Vila Nova de Famalicão, Portugal; [3]Universidade do Minho, Guimarães, Portugal; [4]Universidade do Porto, Porto, Portugal

D-7: P136 **Treatment of Ingrown Nails Using Cu-Al-Mn New Shape Memory Alloy**
NOBUKO TABATA, Japanese Red Cross Sendai Hospital, Sendai, Japan; M. ISHIBASHI, Tohoku University, Sendai, Japan; T. SUETAKE, Suetake Dermatology Clinic, Sendai, Japan; T. OMORI, Y. SUTOU, R. KAINUMA, K. YAMAUCHI, K. ISHIDA, Tohoku University, Sendai, Japan

D-7: P137 **Enzyme Mediated Coupling of Protein-based Biomaterials onto Wool Fibres**
S. JUS[1, 2], G.M. GUEBITZ[2], V. KOKOL[1], [1]University of Maribor, Maribor, Slovenia; [2]Technical University of Graz, Graz, Austria

SYMPOSIUM E
MINING SMARTNESS FROM NATURE

E-1.1: P138 **Dosing Disorder: a Classification of the Visual Effects Developed by Weevils**
J.P. VIGNERON, V. WELCH, M. RASSART, University of Namur, Namur, Belgium

E-2.1: P139 **Effective Impregnation of SiO2 Sol-Gel Solution in Pine Wood and Following Gel Localization in Free Cell Volume**
J. LOCS, L. BERZINA-CIMDINA, D. LOCA, Riga Technical University, Riga, Latvia; A. ZHURINSH, Latvian State Institute of Wood Chemistry, Riga, Latvia

E-2.1: P140 **Giant Neotropical Beetles Show the Way to Hygrochromes Materials**
M. RASSART, J.-P. VIGNERON, LPS (FUNDP), Namur, Belgium

E-2.1: P141 **Superhydrophobic Coating of Metals Under Ambient Conditions**
I.A. LARMOUR, S.E.J. BELL, G.C. SAUNDERS, Queen's University Belfast, Northern Ireland

E-3.2: P142 **Mining Smartness from the Hydraulic System of Spiders: a Bioinspired Actuator for Advanced Applications**
C. LIRA, University of Bristol, UK; C. MENON, K. KIANFAR, M. MANI, Simon Fraser University, Canada

E-4.2: P143 **Multi-UUVs Team Formation Control by a Behaviour-based Method with Fuzzy Logic Adapters**
YAN HOU, R. ALLEN, University of Southampton, Southampton, UK

E-4.2: P144 **An Underwater Biomimetic Jellyfish Robot by Using IPMC**
SEONG WON YEOM, I.K. OH, Chonnam National University, Gwang-ju, Republic of Korea

E-4.3: P145 **Nano and Micromanipulators Based on Magnetic Bacterium**
M. IGNAT, G. ZARNESCU, National Institute of Electrical Engineering Researches-Advanced Researches, Bucharest, Romania

GENERAL INFORMATION

LOCATION AND DATES

The 3rd International Conference "Smart Materials, Structures and Systems" will be held from Sunday June 8 to Friday June 13, 2008 at the:

Congress and Residential Centre
"La Perla Ionica"
Via Unni 10
I-95024 ACIREALE (CT) - Italy

The registration desk will open at 11.00 a.m. on Sunday 8. Scientific sessions will start in the morning of Monday June 9 and continue until Friday June 13. The Conference will close with the "Conference Dinner" on Friday June 13 evening.
Acireale is a relatively small town (about 70.000 inhabitants), 15 km from Catania. It rises on a rich soil terrace of volcanic origin overlooking the Ionian Sea and it is surrounded by the majestic Etna volcano. From Acireale, a town reknowed for its Baroque architectural heritage recognized by UNESCO as Patrimony of Mankind, one may easily reach many of the most renown historical and tourist places in Sicily.
The "La Perla Ionica" Congress and Residential Centre is located about 4 km from Acireale and directly faces the sea.

LANGUAGE

English will be the official language for the Conference.

ACCESS TO ACIREALE AND THE CONGRESS CENTRE

Acireale is located in Eastern Sicily in-between Messina and Catania. It can be reached by:

Car: via the European highway network (car ferry from "Villa San Giovanni", Reggio Calabria)

Plane: Catania international airport is connected with all major Italian airports (Milan, Rome, Bologna, Naples, Venice, Verona, Genoa, Turin) and several European airports (London, Paris, Madrid, Zurich and others). The airport is 5 km from Catania railway station (20 min travel by public bus available at the airport exit). Then you may reach Acireale in about 10 min by frequent train connections (Catania-Messina line), and the Congress Centre from the Acireale railway station by taxi (about 5 min).

Train: Railway Milan-Rome-Naples-Reggio Calabria. Train-boat at "Villa San Giovanni" to Messina. Then the railway Messina-Catania with stop at Acireale.

A complimentary bus transfer service will be arranged for conference members from the Catania Airport to the Congress Hotels on Saturday June 7 and Sunday June 8 with the following time schedule:

Saturday, June 7: every each our as from 2.30 p.m. to 11.30 p.m.
Sunday, June 8: every each hour as from 10.30 a.m. to 11.30 p.m.

Bus available at the airport exit. Travel time by bus (or taxi) from Catania Airport to the Congress Centre is about 30 - 35 min.

CONNECTIONS HOTELS-CONGRESS CENTRE

A complimentary shuttle bus service will be available on **June 8** from 2.30 p.m. to 6.30 p.m. from and to the Congress Hotels and the Congress Centre for participants registration.
A complimentary bus transfer service will be available on **June 9 to 13** (at about 8.00-8.15 a.m.) from the Congress Hotels to the Congress Centre and back to the Hotels at the end of the daily working sessions or Socials.

CONFERENCE REGISTRATION AND FEES

All those planning to attend must register and receive badges. Advanced and late registrations fees are offered as well as special student registration fees. All Registration Fees include 20% government taxes.

Registration Fees (Euro)* (VAT 20% included)	**Early** before April 20	**Late and On Site**
Full Member**	**600 Euro**	**660 Euro**
Student under 27***	**340 Euro**	**370 Euro**
Invited Lecturer and/or Conference Committee Member	**300 Euro**	**330 Euro**
Post Conference Tour*** (optional)**	**70 Euro**	**80 Euro**

**Registration rates are in Euro but payments also may be effected in US$ at the exchange rate of the day in which the payment is made*

*** Authors of Lectures (L), Posters (P), other Participants*

**** Evidence of student status and xerocopy of passport or other document showing the student age must accompany the registration*

***** On site registration for the Post-conference Tour is subject to availability of places*

The fees include:
- General and secretariat costs
- Government taxes
- Admission to all technical sessions
- Participants bag and booklet of the Final Programme
- One copy of the Volume of Abstracts of the whole Conference
- The DVD including the Official Proceedings of the whole Conference as well as a free access to the on-line edition of the Proceedings
- Coffee Breaks
- Admission to the Social Programme including:
  Welcome Cocktail
  Tour to Taormina
  Excursion to Etna Volcano
  "Conference Dinner"

Every attendee is requested to fill in and return the Registration Form.
All registrations received by May 10 will be acknowledged. Registration received after May 10 will not be acknowledged.
Registration which are not accompanied by the appropriate fees will not be filed.

All payments shall be made in Euro or US$, **net of all charges**, by:
- Bank cheque made payable to: **Techna Group Srl, Faenza** (to be attached to the Registration Form)
- Bank draft made payable to: **Techna Group Srl**, SWIFT: BARM IT 2F, IBAN: IT80 B062 0523 7050 0000 0002 852 (copy of the bank draft to be attached to the Registration Form)

Credit cards **cannot** be charged, therefore payment by credit card cannot be accepted. However **on-line payment** can be made.

ON-LINE PAYMENT

To effect on-line payment please go to:

www.cimtec-congress.org/2008/onlinereg.asp

a 3% bank commission is charged for on-line payment

Participants are encouraged to take advantage of the discounted rate, applicable only if **both** registration form and **payment** are received by **April 20**.

REGISTRATION DESK AND SECRETARIAT

Registration desk and secretariat will be open at the Conference venue according to the following time schedule:

June 8	Sunday	11.00-13.00	14.30-19.30
June 9	Monday	8.00-13.00	14.30-19.30
June 10	Tuesday	8.00-13.00	14.30-19.30
June 11	Wednesday	8.00-13.00	
June 12	Thursday	8.00-13.00	14.30-19.30
June 13	Friday	8.00-13.00	

No credit cards are accepted at the registration desk. On site registration payments only can be made by cash or traveller cheques.

PRESENTATION FORMATS

ORAL PRESENTATIONS

Instructions for Oral Presentation have been supplied to each Presenting Author by the Conference Secretariat. The timing for each Lecture (day, and morning /afternoon sessions) can be seen by turning to the Sessions Timetable of page 4 to 6 of this brochure. Equipment for electronic (Power-Point 2003) presentations will be provided including projector and computer. Overhead projectors also will be available. Authors are kindly suggested to bring a hard copy (transparencies) of their presentation for possible needs.
Cost of any special audio-visual requests will be the responsibility of the individual speaker.

POSTER PRESENTATIONS

Instructions for Poster Presentation have been supplied to each Presenting Author by the Conference Secretariat. The timing for Poster mounting/presentation is reported in the Sessions Timetable at pages 4 to 6.

FINAL PROGRAMME

The booklet of the Final Programme including titles and detailed timetable of Lectures, Posters and "HOT POSTERS" will be given at the registration desk. The Final Programme will be hopefully available on the conference web site approx. 10 days before the beginning of the conference.

ABSTRACTS

A book of Abstracts of all scheduled Oral and Poster Presentations will be given to all registered members at the registration desk. It will hopefully be made available on the conference web approx. 10 days before the beginning of the conference.

PROCEEDINGS VOLUMES

Only papers and posters presented at the Conference (including "HOT POSTERS") will be published in the Conference Proceedings. Attendance of the Presenting Author is requested for publication. The Official Proceedings (DVD and on-line edition) will be produced by Trans Tech Publications Ltd. in the *www.scientific.net* series (Volumes 54 onwards - 5 to 8 volumes - of the Techna Group series "Advances in Science and Technology"). Submission and uploading instructions will be provided by Trans Tech Publications Ltd. to the **Presenting Authors** of each paper by February 2008. No printed Proceedings books will be published. The deadline for submission of the first draft of the paper is April 20, 2008.

HOT POSTERS

Late-news papers will be accepted for poster presentation, provided the following mandatory conditions be verified:

- *Poster submission from Presenting Authors who **do not** have oral or poster presentations yet scheduled in the conference programme will only be accepted.*
- *Only one "HOT POSTER" may be contributed by the same Presenting Author.*
- *Submission shall be accompanied by the payment of the registration fee.*
- *The submission deadline of **April 20, 2008** be strictly respected.*

To submit go to:
www.cimtec-congress.org/2008/abstract_submission.asp

The Conference Secretariat will confirm receipt of the Hot Poster and will supply the Presenting Author with proper information about Poster Presentation.

Submission and uploading instructions for the preparation of the text for the Proceedings Volumes will be supplied by Trans Tech Publications Ltd. to the Presenting Author.

SOCIAL PROGRAMME

Get-Together
An informal "Get-Together" (Welcome Cocktail) will be organized on Monday, June 9 late afternoon (18.30-20.00)

Tour to Taormina
Wednesday, June 11 afternoon (15.00-20.00)

Tour to Etna Volcano
Friday, June 13 afternoon (16.30-19.30)

Conference Dinner
Friday, June 13 evening (20.30-23.30)

OPTIONAL TOURS

Tour to Syracuse
June 10 full day

Tour to Piazza Armerina and Morgantina
June 12 full day

Inscriptions to the Optional Tours are to be made on site, subject to availability of places. Programme and inscription fees for each tour may be found at page 44.

POST CONFERENCE TOUR

A one day post conference tour to Agrigento (Valle dei Templi) will be organized on Saturday, June 14. Details can be seen at page 44. Booking and payment of the participation fee has to be made by using the Conference Registration Form. On site booking will be subject to availability of places.

COMPANIONS PROGRAMME

Accompanying persons may register to the Companions Programme which includes:

June 9 afternoon	Guided tour to Catania & Riviera
June 10 full day	Guided tour to Syracuse
June 11 afternoon	Guided tour to Taormina
June 12 full day	Guided tour to Piazza Armerina and Morgantina
June 13 afternoon	Guided tour to Etna Volcano
June 13 evening	Conference Dinner

Appropriate booking space may be found in the Conference Registration Form.
Registration Fee: 210 Euro, after April 20: 230 Euro
On site registration is subjected to availability of places.

CANCELLATION

Prepaid registration fees (conference, companions programme, post-conference tour) are refundable, minus a 20% administration fee, if written notification of the cancellation is received before May 15, 2008. No refund can be made for cancellations received after May 15, 2008. However delegate substitution can be accepted. All refunds will be made after the conference.

VISA APPLICATION

All travel, lodging and registration expenses will be responsibility of the individual participants. Special letters of invitation to be used for visa application will be provided upon written request by the participant to the conference organizers.

WEATHER

The weather in Sicily at the beginning of June is usually fine with temperatures ranging from 22 to 29 °C during the day and 15 to 18 °C during the night. Clothing suitable for (early) summer, including a bathing suit, is recommended.

HOTEL ACCOMMODATION

Rooms have been reserved in a number of hotels located near the Congress Centre (max 20 min bus transfer).
The prices agreed for the Conference members reported in the Hotel Accommodation Form are inclusive of full board (breakfast, buffet lunch* and dinner), service and taxes. All rooms are with air conditioning and private shower. Room reservations are to be made by returning by **April 20, 2008** the Hotel Accommodation Form accompanied by one night hotel deposit to:

EtnaCoast Convention and Visitors Bureau
c/o Acirealehotels
Via Villalba 2
95024 ACIREALE (CT) - ITALY
Telephone +39 095 7637034 Fax +39 095 7639256
E-mail: cimtec@etnacoast.com (Attns. Ms Edmea)

Please note that rooms shortage may occur and that for reservation received after April 20, room availability cannot be guaranteed.

**Lunches will be at "La Perla Ionica" for all Conference Members, dinners at the reserved Hotels. Conference Members who did not book their accommodation through Acirealehotels Housing Bureau may buy Lunch tickets (20.00 Euro) at the Reception of "La Perla Ionica".*

CURRENCY, BANKING AND INSURANCE

Banks are generally open Monday to Friday from 8.30 a.m. to 1.30 p.m. and from 3.00 p.m. to 4.00 p.m. All banks are closed on Saturdays and Sundays. Major credit cards are accepted in most hotels, and in some restaurants and shops.
The Organizers do not assume any responsibility for participant's personal accidents, sickness, thefts or property damage.

DEADLINES

April 20, 2008	Submission of first draft of the paper for the Proceedings
April 20, 2008	Registration at reduced rate
May 15, 2008	Cancellations (80% refund)

AVAILABLE ON THE WEB

http://www.cimtec-congress.org/2008/

as from February 15, 2008

Final Announcement
Registration Form
Hotel Accommodation Form
On-line payment of Registration Fee
Hot-poster Submission

as from May 25, 2008

Final Programme
Abstracts

FURTHER INFORMATION

For scientific and organizational aspects of the conference ***(until May 31)***

CIMTEC 2008
Ms Stefania Bianchedi
P.O. Box 174
48018 FAENZA-ITALY
Phone +39 0546 22461 Fax +39 0546 664138
E-mail: congress@technagroup.it

For aspects related to hotel accommodation (booking, schedule changes, cancellations, etc.)

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c/o ACIREALEHOTELS
Via Villalba 2
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Phone +39 095 7637034 Fax +39 095 7639256
E-mail: cimtec@etnacoast.com (Attns. Ms Edmea)

CONFERENCE TOURS

CATANIA & RIVIERA (Monday June 9, afternoon)

Transfer by motor coach to Catania downtown, to visit its beautiful baroque centre, rebuilt after destruction caused by the Volcano. Walking tour including Cathedral square, Castello Ursino, Cappella di Sant'Agata and the enchanting Via Crociferi with its churches and monasteries.
Proceed to the "Riviera dei Ciclopi" for a panoramic tour along the coast line with its little fishermen villages.

Bus departures: 14.30-15.00. Back to the hotel: 20.00.
The participation fee (20 Euro) includes transportation and English speaking guide.

SYRACUSE (Tuesday June 10, full day)

Transfer by motor coach to Syracuse - that is one of the most important archeological sites in the world. Its history is the history of the Mediterranean civilization, and not only. Guided walking tour of the little Ortigia island (the heart of the town), the old part of new town with the Cathedral, the Aretusa Fountain, the Temple of Apollo. Lunch in a local restaurant. After lunch transfer to the archeological park of Neapolis to have a guided visit of the Latomie, Greek theatre, Roman amfitheatre, the Ear of Dyonisus and the altar of Hieron.

Bus departures: 9.00-9.30. Back to the hotel: about 20.00.
The participation fee (65 Euro) includes transportation, entrance fees, English speaking hostess and guide, lunch.

TAORMINA (Wednesday June 11, afternoon)

For at least a century, the name of Taormina has been written in the Annals of international tourism, and each year its fame is renewed by the beautiful festivals which are held there. Taormina is built on one of the terraces of Monte Tauro at an average height of 250 m. It was a Siceliot city ("polis") whose origins (358 B.C.) are connected with "Naxos" the first Greek colony founded in Sicily.
Transfer by motor coach to Taormina, then downtown is reached by elevators (Taormina is a very little village with narrow streets, where access is forbidden to big vehicles).
Guided walking visit of the town. Time at leisure to have shopping in the main *Corso Umberto* street, and stroll in the narrow street and the magnificient public garden.

Bus departures: 14.30-15.00. Back to the hotel: about 20.00.
The participation fee (25 Euro) includes transportation and English speaking guide.

PIAZZA ARMERINA & MORGANTINA (Thursday June 12, full day)

Transfer by motor coach to Piazza Armerina to visit the beautiful Roman Villa del Casale. Famous all over the world for its 3500 square meters of finest mosaics, the Villa del Casale shows us how Romans lived.
Lunch in local farmhouse on the road to Caltagirone.
Transfer to Morgantina and visit to the archaeological site. This site, dating ~1000 bc was discovered in the middle of 1950's by an archaeological mission from Princeton University (USA) headed by S. Sjoqvist and R. Stillwell.

Bus departures: 9.00-9.30. Back to the hotel: about 19.00.
The participation fee (65 Euro) includes transportation, entrance fees, English speaking guide, lunch.

ETNA VOLCANO & CONFERENCE DINNER (Friday June 13, afternoon-evening)

Departure by motor coach to Mount Etna direction, the biggest active volcano in Europe, proceeding to the foothills of the volcano, through wine yards, lemon groves and old lava flows.
It will be possible to reach, by bus, an altitude of 1900 meters on the sea level, where 2001 and 2002 eruptions arrived and crossed the road. Time at leisure to have a walk on the lava flow and around the mouth of one of the "Silvestri Craters". Then, transfer to Restaurant "Villa Miranda", seat for the "Conference Dinner".

Bus departures: 16.00-16.30. Back to the hotel: about 23.30.
The participation fee (70 Euro) includes transportation, English speaking hostess and Conference Dinner.

POST CONFERENCE TOUR TO AGRIGENTO-"VALLE DEI TEMPLI" (Saturday June 14, full day)

In the "Valle dei Templi", near Agrigento (about 220 km from Acireale), Graecism triumphs in superb monuments. The "archaeological walk", that can be covered also by car, arrives at the "Hill of the Temples", 120 m above the sea level, on whose summit rises the solitary, majestic temple of Junio Lacinia. No far away is the so-called temple of the Concordia, which is the best preserved of the ancient temples. Passing by the remains of a huge Christian-Byzantine necropolis, one arrives to Hercule's temple, perhaps the Agrigento's most ancient temple (end of 6th century B.C.). Beyond what is known as Terone's tomb there are the chaotic ruins of the Temple of Jove the Olimpian, the Temple of Castor and Pollux, and the vast Ellenistic-Roman quarter (4th cent. B.C.) where the streets, ruins of bourgeois houses (often sumptuously mosaicked) and shops give an accurate idea of the town-planning of that period.
Transfer by motor coach to Agrigento. Crossing the idillic scenary of the centre of the Isle and enjoying the characteristic landscape, guests will reach the best preserved monumental archeological Greek site in Sicily. Walking visit of the Temples Valley to admire the ruins of Juno, Concordia, Eracles, Zeus and Dioscuri Temples. Lunch in local restaurant. Visit to the Cathedral.

Bus departures: 8.30-9.00. Back to the hotel: about 20.00.
The participation fee (80 Euro) includes transportation, entrance fees, English speaking hostess, English speaking local guide, and lunch.

CONFERENCE REGISTRATION FORM

Return by **April 20 2008** to: CIMTEC P.O. BOX 174 48018 FAENZA ITALY

PARTICIPANT for on-line registration please go to: ***http://www.cimtec-congress.org/2008/onlinereg.asp***

Family Name ..... First Name .....

Institute / Company .....

Department .....

Address .....

Postal Code ..... City ..... Country .....

Phone ..... Fax ..... E-mail .....

VAT Number (for EC countries) .....

Only for Italian delegates: Codice Fiscale (anche se uguale alla P.IVA) .....

Registration Fees* (EUR)	**Early** (by April 20)	**Late and On Site**
Full Member**	600.00 Euro	660.00 Euro .....
Student under 27***	340.00 Euro	370.00 Euro .....
Invited Lecturer (IL)****	300.00 Euro	330.00 Euro .....
Post Conference Tour (optional)	70.00 Euro	80.00 Euro• .....

** Payment may also be in US$ at the exchange rate of the day in which the payment is made*

*** Authors of Contributed Lectures (L) and Posters (P), other participants*

**** Evidence of student status and xerocopy of passport or other document showing the student age must accompany the registration*

***** and/or Members of Conference Committees*

• On site registration is subject to availability of places

I confirm attendance in the following complimentary socials (check please)

❒ Welcome Cockail (June 9) ❒ Tour to Taormina (June 11)

❒ Tour to Etna & Conference Dinner (June 13)

This section is to be filled-out ONLY if you are a **Presenting Author**

Please indicate below the code number of your presentation as assigned by the Conference Secretariat and reported in this Final Announcement **Code Number** .....

ACCOMPANYING PERSONS Surname ..... Name .....

Surname ..... Name ..... Surname ..... Name .....

Companions Programme	**Early** *(by April 20)*	**Late and On Site***
Persons	No. ..... x 210.00 Euro .....Euro	No. ..... x 230.00 Euro.....Euro
Post Conference Tour		
Persons	No. ..... x 70.00 Euro .....Euro	No. ..... x 80.00 Euro.....Euro

** On site registration is subject to availability of places*

→

SUMMARY OF FEES

Registration Fee (Full Member)		Euro .....
Registration Fee (Student)		Euro.....
Registration Fee Invited Lecturer or/and Conference Committees Member		Euro.....
Registration Fee (Accompanying Persons)		Euro.....
Post Conference Tour		Euro.....
	TOTAL	Euro .....

PAYMENT (to be made ***net of all charges*** in Euro or equivalent in US$)

Payment of ..... Euro / US$ is being made:

❒ By bank cheque, attached herewith, payable to **Techna Group Srl, Faenza**

❒ By bank draft made payable to: **Techna Group Srl**, SWIFT: BARM IT 2F,
IBAN: IT80 B062 0523 7050 0000 0002 852 *(please enclose copy of the Bank Draft)*

❒ I will pay on site

NOTE: USE A SEPARATE FORM FOR EACH INDIVIDUAL REGISTRATION

HOTEL ACCOMMODATION FORM Return by April 20, 2008 to:

EtnaCoast Convention and Visitors Bureau c/o Acirealehotels, Via Villalba 2, 95024 Acireale (CT) - ITALY
Tel. +39-095-7637034, Fax +39-095-7639256, E-mail: cimtec@etnacoast.com (Attns. Ms Edmea)
Sito web: www.etnacoast.com

PARTICIPANT

Family Name ..... First Name .....

Full Address .....

.....

Post Code ..... City ..... Country .....

Telephone ..... Fax ..... E-mail .....

VAT Number (for invoicing) .....

Full Board Prices per Day

	Single Room (Standard)	**Double Room** (Per person)	**Single Room** (Mansard)*
H****	127.00 Euro	107.00 Euro	
H***	107.00 Euro	87.00 Euro	82.00 Euro

**Smaller room just beneath the roof with conditioned air and shower. Limited number. Assigned on first-come, first-served basis.*

Prices include: full board (room, breakfast, buffet lunch** and dinner, 1/4 lt mineral water and 1/4 lt wine at each meal), service and taxes. All rooms are with conditioned air and shower.

Please book No. ..... Single room/s (Standard) for No. ..... nights
No. ..... Double room/s ❒ twin ❒ double for No. ..... nights
No. ..... Single room/s (Mansard) for No. ..... nights

in a **H****** ❒ **H***** ❒ hotel at the prices reported above

First night deposit has to be forwarded for each booked room. The full amount of deposit received will be detracted from hotel final bill

Arrival on ..... Departure on .....

Arrival by: ❒ car ❒ train ❒ plane (Flight number..... Arrival time in Catania airport.....)

Rooms Booked	**Deposit per Room**		**Total**
	H****	**H*****	
No. ..... single room/s (Standard)	127.00 Euro	107.00 Euro	Euro .....
No. ..... double room/s	214.00 Euro	174.00 Euro	Euro .....
No. ..... single room/s (Mansard)		82.00 Euro	Euro .....
		GRAND TOTAL	Euro .....

❒ The payment has been effected by bank draft free of charges*** to: **Acirealehotels**, Credito Siciliano, Agenzia 108 Acireale, SWIFT: RSAN IT 3P, IBAN IT96 Y030 1926 2010 0000 0160247 - **DESCRIPTION: CIMTEC 2008 (please enclose a copy of the bank draft)**

**** If there are bank charges, these will be included in the hotel bill of the participant*

❒ **Credit Card Payment** (**VISA, MASTERCARD, AMERICAN EXPRESS**)
On-line payment **https://www.moneynet.it/acirealehotels**
Payment by DINERS: please contact EtnaCoast Convention and Visitors Bureau, Tel. +39-095-7637034, Fax +39-095-7639256, E-mail: cimtec@etnacoast.com (Attns. Ms Edmea)

REMARKS

- *Acirealehotels will confirm your booking. Balance will be made at each hotel on arrival.*
- *In case of no-show of the first night, room(s) availability or refund of the deposit cannot be guaranteed.*
- *Cancellation policy: i - Cancellations received by May 20, refund of 50% of the deposit*
  ii - Cancellations received after May 20, no refund. However delegate subtitution is allowed.
- *Bus transfer to and from the Congress Center will be provided.*
- ***Lunches will be at "La Perla Ionica" for all Conference Members, dinners at the reserved hotel.*
- ***For reservation received after April 20, rooms availability cannot be guaranteed.***

NO RESERVATION WILL BE MADE WITHOUT PAYMENT OF FIRST NIGHT

DATE ..... SIGNATURE .....

Sicily


Agrigento - The "Valle dei Templi"

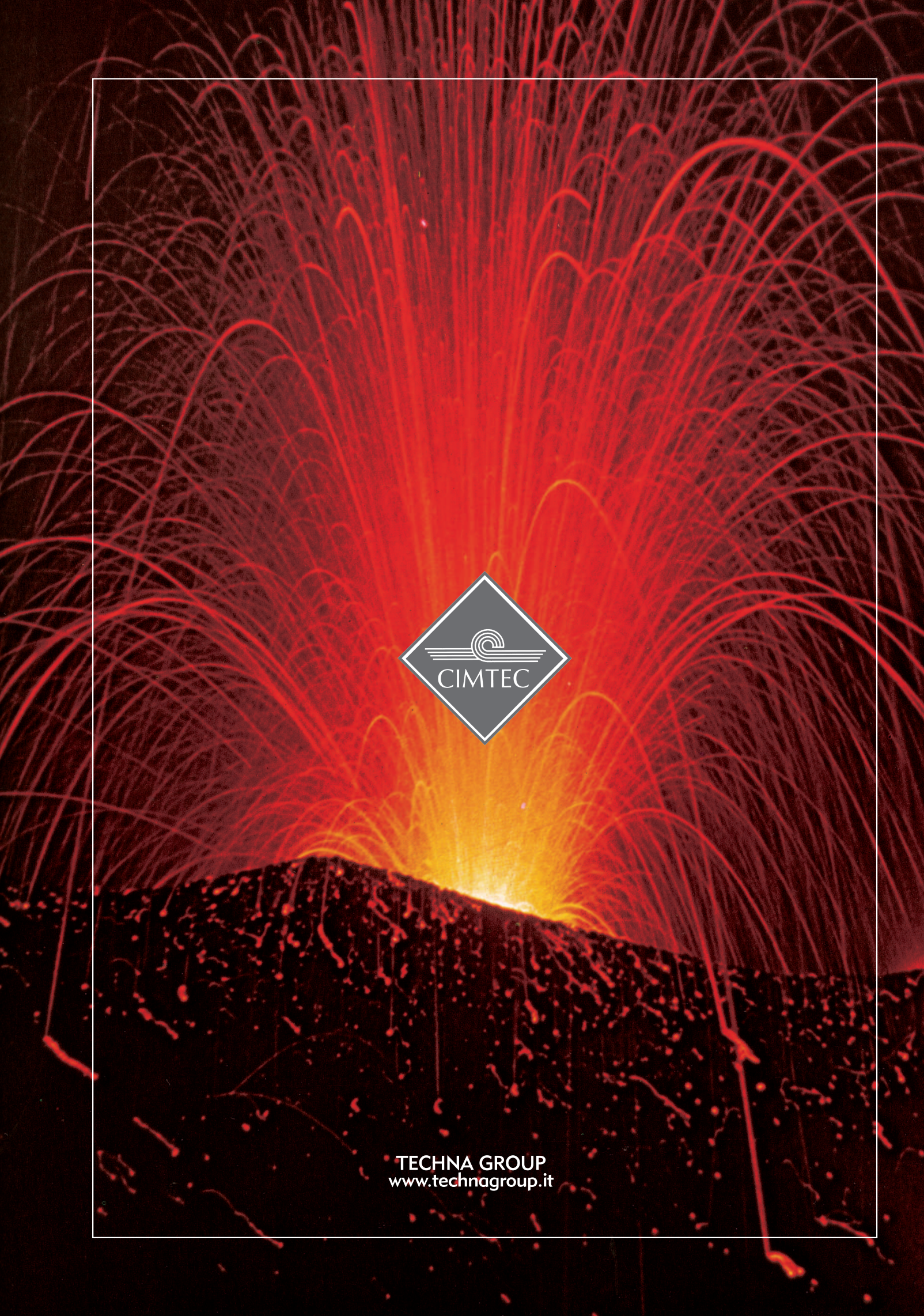

Morgantina - Ancient theatre


Siracusa - Church of Santa Lucia alla Badia


Piazza Armerina - Villa del Casale


Cape Taormina


Villa Mirador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