



6th World congress on Biomimetics, Artificial Muscles and Nano-Bio
2011 October 25-26-27
Cergy-Pontoise, Paris, France
Scientific Program

Keynote

KN1

IPMC Artificial Muscles Mechatronics-Future Prospectus

M. Shahinpoor

KN2

Artificial muscle: How does it compare with the real thing?

J. D.W. Madden, T. Mirfakhrai, T. Shoa, J. Fourough, G. M. Spinks, S. Fang, M. Kozlov, J. Oh, R. H Baughman

KN3

Advances in Using Dielectric Elastomer Actuators in Robotics

E. Smela, M. Kujawski, B. Balakrisnan, J. Pearse, S. Park

KN4

Cooperative Tuning between Membrane Dynamics, Matrix Swelling and Biology during Vesicular Exocytosis of Neurotransmitters

Christian Amatore

KN5

Sensing Actuators: Theoretical Description

T.F. Otero, J.G. Martínez, Y. Ismail, L Valero

KN6

Electrochemical Actuation and Creeping of Porous Polypyrrole film in Ionic Liquids

K. Tominaga, T. Sinonome, K. Kaneto

Invited Lecture

IC1

Electro-adaptative Interpenetrating Polymer Networks

C. Chevrot, D. Teyssié, F. Vidal, C. Plesse, P.-H. Aubert, F. Tran-Van, P. Verge, L. Goujon, A. Khaldi, N. Festin, A. Teissier, S. Alfonsi, I. Fabre-Francke, L. Beouch

IC2

Micro-sized Artificial Muscles for Bio-inspired Applications

G. Alici, B. Gaihre, G. M. Spinks, J. M. Cairney

IC3

Conjugated polymers at the interface to biosystems

O. Inganäs

IC4

Microwave Graphene Syntheses and Graphene-based Artificial Muscles

Il-Kwon Oh, J.-H. Jeon, V. Sridhar

IC5

Supramolecular Self-assembly of Biopolymers with Carbon Nanotubes for Biomimetic and Bio-inspired Sensing and Actuation

W. Chen

IC6

Solid State Soft Actuators Based on Carbon Nanotubes/Ionic Liquid Gels

K. Asaka, T. Sugino, K. Kiyohara, K. Mukai, N. Terasawa

IC7

Macro-, Micro- and Nano-Actuators Based on Liquid Crystal Elastomers – a bottom-up molecular design

M.-H. Li, P. Keller

IC8

Electromechanical Sensor Properties of CDC Laminate

A. Aabloo, I. Must, F. Kaasik, I. Põldsalu, U. Johanson, A. Punning

IC9

Bioinspired Tunable Lens Made of Elastomeric Artificial Muscles

F. Carpi, G. Frediani, S. Turco, D. De Rossi

Interdepartmental Research Centre 'E. Piaggio', University of Pisa, Italy

IC10

Analysis of the memory properties of PEDOT induced by the electromechanical processes

H. Randriamahazaka, S. Cloteau, J. Ghilane, J.-C. Lacroix

IC11

Resilin-mimetic Biomaterials with Advanced Responsive Behaviour

N. K. Dutta, M. Y. Truong, S. Mayavan, N. R. Choudhury, M. Kim, C. M. Elvin, A. J. Hill

Oral Presentation

OC1

A Bio-mimetic Dental Implant

K. Arakawa

OC2

Bending and linear bucky gel actuators from chemically modified carbon nanotubes

M. Biso, A. Ansaldo, L. Ceseracciu, D. N. Futaba, K. Hata, A. C. Barone, D. Ricci

OC3

Actuating Conducting Polymers for Artificial Muscles: Studying Ion Flux using a Modified Scanning Ion Conductance Microscope

C. Laslau, D. E. Williams, B. E. Wright, J. Travas-Sejdic

OC4

Toward Soft-Brain Materials with Topological Wrinkle Space

H. Endo, M. Tamuraa, T. Kawai

OC5

Conducting IPN actuator for micro-aerial vehicle and Microsystems

A. Khaldi, C. Plesse, C. Soyer, A. Maziz, C. Chevrot, D. Teyssié, E. Cattan, F. Vidal

OC6

Sensorial and self-sensing properties of ionic electromechanically active polymer actuators

K. Kruusamäe, I. Must, A. Punning, A. Aabloo

OC7

A Simultaneous Sensor and Actuator from a Single IPMC Finger

Ron Lumia

OC8

Effects of Polyethylene glycol Plasticizer on Polypyrrole oxidation kinetics

M. R. Nateghi, A. Moosavipour

OC9

Conducting IPN actuator/sensor for biomimetic perception system in soft robotics

N. Festin, C. Plesse, C. Chevrot, D. Teyssié, P. Pirim, F. Vidal

OC10

Role and Effect of Poly(4-styrenesulfonic acid) on Humido-Sensitive EAP Actuators

H. Okuzaki

OC11

Cross-Linked Semi-Crystalline Poly(epsilon-caprolactone) Networks as shape-memory polymer systems and polymeric actuators

J.-M. Raquez, S. Vanderstappen, F. Meyer, P. Verge, M. Alexandre, J.-M. Thomassin, C. Jerome, P. Dubois

OC12

Equivalent Circuit and Its Effects on Actuation of FLEMION-based IPMC

S. Tsuchitani, M. Okamoto, K. Kikuchi

OC13

Flexible Supercapacitor-like Actuator with Carbide-derived Carbon Electrodes

J. Torop, V. Palmre, M. Arulepp, T. Sugino, K. Asaka, A. Aabloo

OC14

The effect of reactive-diffusion and dynamic loading on protein transport in biological tissues

Lihai Zhang

OC15

Modulation of the interfacial electrochemistry of surfactant-functionalised polypyrrole actuator systems

P.G.L. Baker, F.J. Iftikhar, T. Waryo, E.I. Iwuoha

OC16

Magnetic liquid crystalline materials

O. Riou, B. Lonetti, L. Zadoina, K. Soulantica, A.-F. Mingotaud, M. Mauzac, M. Respaud, B. Chaudret

OC17

DEAP based bio-inspired smart sensors for robotics

C. Maibhom, A. Bilberg

OC18

Carbon Nanotube Actuators and their Applications on Example of a Drum Brake

U. Kosidlo, R. Addinall, C. Glanz, I. Kolaric

OC19

The Actuation Mechanism of Conducting Polymers -Unusual Effects and Their Interpretation

J. Heinze, D.G.Weis, R. Kiefer, G. Urban

OC20

Ion Flux Dynamics with Friction in Ionic Polymer Metal Composites (IPMCs)

M. Shahinpoor

OC21

Characteristics of Conducting Polymer Actuators based on Polypyrrole

M. Fuchiwaki, T. F. Otero, K. Tanaka

OC22

Influence of micro- and nanofillers on DEAP performance

A. Ladegaard Skov, A. Bejenariu, A. Egede Dagaard

OC23

PEDOT-CNT microelectrode array for neuronal diagnostics and stimulation

R. Gerwig, K. Fuchsberger, M. Stelzle, A. Stett

OC24

The Influence of Polypyrrole Structure on Electromechanical Performance

D. Melling, S. Wilson, M. Berggren, E. W. H. Jager

OC25

Short- and long-term electroactivity of polypyrrole

T. Tamm, R. Temmer, M. Marandi, T. Raudsepp

OC26

Light-Responsive Azo Polymers as Photo-Actuators and Artificial Muscles

C. Barrett, Z. Mahimwalla, A. Goulet-Hanssens, T. Singleton

OC27

A Bioelectronic Sensor Nanoplatfrom Based On Olfactory Receptors And Electrochemical Impedance Spectroscopy

J. Daligault, A. Dewaele, M.-A. Persuy, P. Congar, C. Baly, K. Badonnel, N.Zine, H. Korri-Youssoufi, S. Chebil, A. Errachid, N. Jaffrezic-Renault, E. Pajot-Augy

Poster Presentation

P1

Thermal and room temperature electrical conductivity measurement studies of an organic-inorganic composite polyaniline Ce(IV) molybdate

Inamuddin, Z. Alam, S. Ashfaq Nabi, Mu. Naushad

P2

Nanomedicine: benefits of polymeric self-assemblies for photodynamic therapy

J.Ehrhart, A.-F. Mingotaud, C. Mingotaud, P. Vicendo, J.-P. Souchard, F. Violleau, L. Wasungu, J. Teissié, M.-P. Rols, S. Bonneau, R. Kerdous, F. Sureau

P3

Synthesis and Characterization of New Nano Acetophenon Complexes Dithiocarbamate and Study of Their Biological Properties

M. Mirzaie, H. Nabipour

P4

Biomimetic Robotic Venus Flytrap (Dionaea Muscipula Ellis) made with Ionic Polymer Metal Composites (IPMCs)

M. Shahinpoor

P5

Self-Resonant Step-up DC/DC Converter for driving flapping wings of the Micro Robotic Insects

Y.-P. Liu, D. Vasic, F. Costa

P6

Design of electronic conducting polymer based microactuators by microsystem process

A. Maziz, C. Plesse, A. Khaldi, C. Soyler, C. Chevrot, D. Teyssié, E. Cattan, F. Vidal

P7

Rukshala Anton

P8

Modification of Gold Electrode with Biomolecule and Silver Nanoparticle for Electroanalysis

P. Kar, P. Banet, F. Tatar, C. Plesse, P.H. Aubert, C. Chevrot

P9

Micelle-assisted One-pot Conversion of Aniline to Polyaniline/Silver Nanohybrid Using Phenylene diamine Accelerator

H. Behniafar, A. Alinia Pourri

P10

Bending Actuation of Bi-layered Composite Material Based on PEDOT:PSS Thin Film over a Monodomain Liquid Crystal Elastomer

F. Greco, V. Domenici, T. Assaf, S. Romiti, A. Menciassi, B. Zalar, V. Mattoli

P11

Carbon Aerogel Based EAP Actuator Material as Sensor Material

F. Kaasik, I. Must, J. Torop, A. Aabloo

P12

Aptamer based SERS sensing surface for direct detection of proteins

I. Lamberti, A. Antoccia., C. Battocchio, L.G. Quagliano, C. Tanzarella, G. Iucci, S. Foglia

P13

Electro-morphological characterization of actuators based on ionomeric polymer-metal composites (IPMC)

L. A. Hirano, C. H. Scuracchio, G. L. Mantovani, J. F. R Queiruga, M. T. Escote, L. S Martins-Filho

P14

Synthesis of Gold Nanoparticles Coated Aspartic acid and theirs Conjugation to FVIII protein

M. Farahnak Zarabi, A. Akbarzadeh, N. Arshadi

P15

Synthesis and Characterization of CNT/ThO₂ Composite: Analytical Application for the Removal of Toxic Heavy Metal Ions

M. Naushad, Z. A. Al-Othman

P17

Doxorubicin loaded protein nanoparticles: A new oral formulation for treatment of hepatocellular carcinoma

K. Golla, C. Bhaskar, A. K. Kondapi

P18

Preliminary study on the application of IPMC actuator for a coaxial Nano Aerial Vehicle

A.-B. Sun, D. Bajan, J.-M. Moschetta, C. Thipyopas

P19

Flexible electroreflective device with NIR reflectance modulation

L. Goujon, P.H. Aubert, F. Vidal, L. Sauques, D. Teyssié, C. Chevrot

P20

Nanostructuring of innovative Molecular Imprinted Polymers for label free protein detection

S. Rodriguez Vilches, J.-B. Doucet, J. Fitremann, M. Mauzac, A.-F. Mingotaud, C. Séverac, L. Laplatine, C. Vieu, C. Thibaut, D. Collin, P. Martinoty, V. Paveau, J.-C. Cau

P21

Biosynthesis of Gold nano particle by E.coli strain DH5a

S. Khademi Mazdeh, M.H. Motamedi, A. Akbarzadeh, M. Mehrabi

P22

Construction of Protein Microarrays on Freestanding Polymeric Nanofilm towards Spatio-Selective Cell Culture Platform

T. Fujie, A. Desii1, V. Mattoli

P23

Preparation and characterization of ultrasuperparamagnetic iron oxide nanoparticle using polysuccinimide derivative for MRI contrast agent

S. Woo Ha, S. Kim, J. Young Yoon, D. Chul Ha, Y. Woong Choi, S. Joo Hwang, B. Kook Kwak, B. Cheol Shin, S. Hang Cho

P24

Mechanical Behavior of Bioinspired Composites

G. Baran, W. Wang, L. Chen, K. Sadeghipour

P25

Adsorption studies of microbial lipase through PHEMAPA microbeads embedded - PHEMA cryogel

K. Çaktü, E. A. Türkoğlu, G. Baydemir, H. Yavuz, A. Denizli

P26

New Soft Polymeric Materials Applicable as Elastomeric Transducers

A. G. Bejenariu, A. L. Skov

P27

Influence of the chemical nature of ionic liquids on the electromechanical properties of bucky-gel carbon nanotube actuators

H. Randriamahazaka, K. Asaka

P28

Electrochemical analysis of the relaxation and dissipation processes during the ions flux dynamics in PEDOT film

H. Randriamahazaka, C. Pellé Tangué, J. Ghilane, J.-C. Lacroix

P29

Carbon Nanotubes for the Development of Glucose Biosensors Based on Gold Electrodeposition

F. K. Moghadam, M Hamzehlooei

P30

Nano-formulation of epoxide hydrolase and its application to production of chiral styrene oxide and corresponding vicinal diol

Eun Yeol Lee

P31

Design and synthesis of solid polyelectrolytes based on “polymeric ionic liquids”

A. S. Shaplov, P. S. Vlasov, D. O. Ponkratov, E. I. Lozinskaya, I. A. Malyshkina, F. Vidal, C. Wandrey, Y. S. Vygodskii

A.N. Nesmeyanov Institute of Organoelement Compounds Russian Academy of Sciences (INEOS RAS) Moscow, Russia

P33

Structural, geometrical and electrical considerations for carbon nanotube actuator construction within functional models

R. Addinall, U. Kosidlo, C. Glanz, I. Kolaric

P34

Hydrogels with Mesoscopic Network-Like Structure of Semi-Rigid Polyion Complex

Z. L. Wu, T. Kurokawa, J. P. Gong, M.-H. Li

Exhibition

Carbon nanotube brake for rotating systems

R. Addinall

Fraunhofer Institute for Manufacturing Engineering and Automation (Fraunhofer IPA), Stuttgart, Germany

Conducting IPN with actuation and sensing properties for electroactive polymer vibrissae

N. Festin

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