



European Materials Research Society

2023 Spring Meeting May 29 | June 2

40th Anniversary

Congress & Exhibition Centre, Strasbourg, France

SYMPOSIUM I

Bioinspired and biointegrated materials as new frontiers nanomaterials (11th edition)

Symposium Organizers:

Emmanuel STRATAKIS, IESL - FORTH, Heraklion, Crete

Eugenia BUZANEVA, University of Kyiv, Ukraine

Masaru TANAKA, Kyushu University, Japan

Peter SCHARFF, TU Ilmenau, Germany

Monday May 29

I01

Smart Nano-Materials and Systems Multifunctionality Strategy from Nature

Chairperson(s) : CIOFANI Gianni - ERDEM Arzum - STRATAKIS Emanuel - TANAKA Masaru

Bruxelles (Ground floor)

09:00	2826	10	Introduction	SIFFERT Paul
09:10	2838	50	It just says click – and the molecules are coupled together	MELDAL Morten Peter

Monday May 29

I02

Smart Nano-Materials and Systems Multifunctionality Strategy from Nature

Bruxelles (Ground floor)

10:30	2832	INV	Design and Synthesis of Functional Biomaterials-Intermediate Water Concept for Medical Devices	TANAKA Masaru
11:00	2501	INV	Induction of neuroregeneration and functional neural network development in adECM/rGO scaffolds	RANELLA Anthi
11:30	2552		4D printed scaffolds composed of natural polymers for bone tissue engineering	DASKALAKIS Panagiotis
11:45	2550		Effect of topography and statin-loaded biodegradable micropatterned polymeric replicas on osteogenic differentiation	KANAKOUSAKI Eleni

Monday May 29

I03

Smart Nano-Materials and Systems Multifunctionality Strategy from Nature

Bruxelles (Ground floor)

13:30	595		Design and Fabrication of Biomimicking Radially Graded Scaffolds via Vat Photopolymerization for Bone Tissue Engineering	WANG Yue
13:45	2678		Composite coatings for osteoblast growth attachment obtained by pulsed deposition techniques	GRUMEZESCU Valentina
14:00	246	INV	Biomimetic antioxidant nanomaterials in biomedicine	CIOFANI Gianni
14:30	2293		Co-delivery of chemotherapeutics by polydopamine based nanomaterials	MRÓWCZYNSKI Radoslaw
14:45	1782		Fast Light-Driven Motion of Polydopamine Nanomembranes	GRACZYKOWSKI Bartlomiej
15:00	1253		Development of functional Si nanoparticles elaborated by laser method in liquid medium for non-invasive TPE-PDT biomedical applications	AL-KATTAN Ahmed
15:15	14		Versatile Phenol-Incorporated Nanoframes for In Situ Antibacterial Activity Based on Oxidative and Physical Damages	LIU Pei
15:45	968		Engineering materials with DNA towards building nucleic acid sensors	KIM Youngeun

Monday May 29

I04

Smart Nano-Materials and Systems Multifunctionality Strategy from Nature

Bruxelles (Ground floor)

16:30	2709	INV	Recent Applications of Electrochemical Nucleic Acid Biosensors based on Carbon Nanomaterials	ERDEM Arzum
17:00	192		Cuprous Oxide Nanoparticles Decorated Fabric Materials with Anti-biofilm Properties	GUPTA Akanksha
17:15	1759		Development of a glucose electrochemical biosensor based on scribing laser induced graphene on natural biopolymer platforms	HAMIDI Hassan
17:30	2839	INV	Carbon materials chemistry and processing for multi-functionality: from graphite to fullerenes-tubes-graphene	SCHARFF Peter

Tuesday May 30

I05

Young Investigators Forum - Grown the Biofuture

Chairperson(s) : NOZAWA Koki

Bruxelles (Ground floor)

10:30	2846	10	Keynote Introduction	SIFFERT Paul
10:40	2845	50	An ingenious tool for building molecules	LIST Benjamin
11:30	2831	INV	Molecularly imprinted polymer nanogels as synthetic antibody mimics for diagnostics and therapy	HAUPT Karsten

Tuesday May 30

I06

Young Investigators Forum - Grown the Biofuture

Bruxelles (Ground floor)

13:00	578		Development of Topical Drug Formulations for the Treatment of Ocular Neovascularization	YETISGIN Alp
13:15	775		High carrier mobilities in polycrystalline germanium layers for flexible electronics	NOZAWA Koki
13:30	2471		2D hybrids of palladium nanozymes and graphene oxide as a new multimodal theranostic platform	SATRIANO Cristina
13:45	2515		Development and characterization of FusionRed variants	HUNG Sheng-Ting
14:00	2522		Thermoelectric application of Ge-based group IV semiconductor layers	MAEDA Shintaro
14:15	2533		Epitaxial growths of Mn ₄ -xGaxN films and their X-ray magnetic circular dichroism spectra	HATATE Aoi
14:30	380		Current generation by direct electron pumping by Escherichia Coli to Au electrode	MONDAL Sovanlal
14:45	594		Heparin Release and Sustained Delivery of Ionic Dissolution Products for Quick Endothelialization in 3D Printed Vascular Grafts	CHEN Shangsi
15:00	1802		CART: Carrier-based Actuatable and Reprogrammable Transport	MANDSBERG Nikolaj Kofoed

15:15	2490	Nitrogen-doped graphene quantum dots as versatile carriers for nanomedicine	ZAJICKOVA Lenka
15:30	2356	Machine learning techniques for analyzing time evolution in microscope images	ISHIYAMA Takamitsu
15:45	1805	Kuramoto-Model-Based Data Classification Using the Synchronization Dynamics of Uniform-Mode Spin Hall Nano-Oscillators	GARG Neha

Tuesday May 30

I07

Young Investigators Forum - Grown the Biofuture

Bruxelles (Ground floor)

16:30	963	Cells' preferable uptake of microdiamonds and the role of myosin motor proteins in the particle uptake and transport	EBRAHIMI Armin
16:45	561	Bio-inspired radiative cooling aerogel for sustainable cold chains in developing countries	PIN-HUI Lan
17:00	39	PEG-heparin biohybrid synthetic hydrogels for tumour culture	CASTELLOTE-BORRELL Miquel
17:15	277	The compression strength of carbon fibre composite increases with a nanostructured interface inspired by nacre	WANG Shifan

Tuesday May 30

I_P

Poster session

Chairperson(s) : SOLÉ PORTA Anna

Etoile (1st floor) - 4.30 p.m to 6.30 p.m

01_166	Sustainable and transparent gas barrier films for food packaging	CHO Sangho
02_528	Leaching mechanisms of PVP coated silver nanoparticles from anti-microbial bioplastics	HERMANS Dries
03_1150	Synthesis of chitosan-clay composite for potential packaging application	RAZONADO Ivy Ann
04_1242	Nano-zirconia dental implants via additive manufacturing	GKOMOZA Paraskevi

05_1268	Numerical and kinetic study of isomerization reaction of oriented polyacetylene induced by laser impact, shown by multichannel Raman	LAKHZOUM Abderrahim
06_1336	kinetic study and synthesis of new macroinitiator by ozonization of poly (vinylidene fluoride)	KRIBAA Ilhem Rafika
07_44	Thermally Stable and Reusable Ceramic Encapsulated CalB Enzyme Particles for Rapid Hydrolysis and Esterification	CHANG Jeong-Ho
08_45	Magnetic Nanoparticles Immobilized CalB Enzyme Particles for reusable and rapid esterolysis of p-nitrophenyl alkanoates	CHANG Jeong-Ho
09_1661	Cationic Surface Modification of Tunicate-based Cellulose Nanofibers for the Development of Environmentally Friendly Materials and Its Application	LEE Jun Hyuk
10_1586	Cellulose/Aramid Nanocomposite for flame retardant	HYUN BEEN Park
11_2849	Theranostic Polymeric Nanocarriers Administered to the Brain and Lungs	SOLE PORTA Anna
12_2852	4D printed scaffolds composed of natural polymers for bone tissue engineering	DASKALAKIS Panagiotis

Wednesday May 31

I08

Living Systems/Materials and Biomimetics Multifunctionality from Nature

Chairperson(s) : CHUKOVA Oksana - FELIX Olivier - ZHU Bo

Bruxelles (Ground floor)

10:30	357	INV	Biomimetic photoswitchable dry adhesives	STAUBITZ Anne
11:00	195	INV	Functionnalized plant virus-based nanomaterials: From synthesis to applications	HA DUONG Nguyet Thanh
11:30	2833	INV	Catalytic Bioempowerment of Individual Cells in Single-Cell Nanoencapsulation	CHOI Insung S.

Wednesday May 31

I09

Living Systems/Materials and Biomimetics Multifunctionality from Nature

Bruxelles (Ground floor)

13:00	2149	INV	Hierarchical bio-inspired nanocomposite materials with anisotropic properties	FELIX Olivier
13:30	716		Biobased vitrimers - novel dynamic materials from vegetable oils and their applications	ZYCH Arkadiusz
13:45	1548		Nanolipogels for drug delivery applications	CHU Renee
14:00	2147	INV	Green synthesis and characterization of luminescent ZnO@polymer core-shell nanoparticles with natural biopolymer coatings	CHUKOVA Oksana
14:30	1604		Scission of a specific covalent bond by mechanical force transferred through DNA	KIM Gyurin
14:45	2394		A Simple(r) Approach to Making DNA	CALLAGHAN Kimberley
15:00	2463		Design and Synthesis of Programmable DNA Hydrogels Based on Rolling Circle Amplification Products	HANIF Wildan
15:15	1603		Antifreeze protein-DNA hybrid nanostructures for inhibition of ice recrystallization	KANG Mingyeong

15:30 1641 Introduction of a lipophilic nucleobase to DNA by enzymatic reaction SOERIAWIDJAJA Banyu Firdaus

Wednesday May 31

I10

Living Systems/Materials and Biomimetics
Multifunctionality from Nature

Bruxelles (Ground floor)

16:30	1580	INV	Biomimicking Organic Electronic Materials Toward Bioelectronic Devices Intrinsically Resisting Nonspecific Interactions	ZHU Bo
17:00	1226		Facile but Tunable Electroassembly of Tubular Functionalized nano PEDOTs toward Bioelectronics	ZHI Geng
17:15	1654		Nanoconfined PEDOT:PSS with One- and Two-Dimensional Alignment	LEE Seunghyeon
17:30	706		Magnetic membrane polymers with on-board electronic skins for supervised actuation	OLIVEROS MATA Eduardo Sergio
17:45	445		3D multiphoton lithography of protein-based photoresists	SIVUN Dmitry

Thursday June 1

I11

Tutorial Advancing Frontiers in Biomaterials and Nanomedicine

Chairperson(s) : CHEN Peilin

Bruxelles (Ground floor)

11:00	2826	10	Introduction	SIFFERT Paul
11:10	2827	50	Frontiers in Neurosensorics	JULIUS David

Thursday June 1

I12

Tutorial Advancing Frontiers in Biomaterials and Nanomedicine

Bruxelles (Ground floor)

13:00	147	INV	Validation of Nanomedicine in Animal Models by Real-time Two Photon Imaging	CHEN Peilin
13:30	1837	INV	Indocyanine Green-loaded Activatable Theranostic Nanogels for Image-guided Photodynamic Therapy and Enhanced Immunotherapy of Rapidly Growing Cancers	CHOI Yong Doo
14:00	684	INV	Magnetic Nanoparticles for Theranostics	ICHIYANAGI Yuko
14:30	780	INV	Concurrent and sensitive detection of duplex in opto-electrochemical platform	LEE Min-Ho
15:00	769	INV	From Waste to Biomedical Resources: Applications of Keratin to Tissue Regeneration, Nanomedicine and Hemostasis Agent	YU Jiashing
15:30	564	INV	Development of Bacteria-Targeted Mesoporous Silica Nanotherapeutics for Wound Healing	WU Si-Han

Thursday June 1

I13

Tutorial Advancing Frontiers in Biomaterials and Nanomedicine

Bruxelles (Ground floor)

16:30	1578	INV	Regulation of liquid-liquid phase separation induced by G-quadruplex nucleic acids	MIYOSHI Daisuke
17:00	763	INV	Bioinspired Surfaces Designed for Stem Cell Expansion	KATO Koichi
17:30	1072	INV	Using Real-time and High throughput Force-sensing Biochip Reveal Cellular Heterogeneity Under Drug Treatment	SHIU Jau-Ye

Friday June 2

I14

Tutorial Frontiers in Biodiagnostics

Chairperson(s) : CHEN Peilin - PICHON Benoit

Bruxelles (Ground floor)

09:00	201	INV	Probing Circulating Tumor Cells in Animal Model Using Quantum Dots and Real-time Intravital Imaging	KUO Chiungwen
09:30	176	INV	Investigation of high refractive index non plasmonic nanoparticle assemblies supported onto a metal thin film as a promising platform for SPR biosensor	PICHON Benoit

Friday June 2

I15

Tutorial Frontiers in Biodiagnostics

Bruxelles (Ground floor)

10:30	2660	INV	Development of an Ag@Au core/shell system as label-free SERS investigation tool for malignant/non-malignant cells assessment	CHILIBON Irinela
11:00	330	INV	Air-Stable Bio-Protonic Devices with Ion Channels for Electronic Control of Hydrogen Ion Flow through Phospholipid Membranes	MS SADHUKHAN Riya
11:30	293	INV	Behaviour of citrate-capped gold nanoparticles at biomembranes – atomic insight at supported lipid bilayer and liposome interfaces.	ELBOURNE Aaron

