



SCHOLARENA

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**Proceedings of**

**SCON 2<sup>nd</sup> International Conference on**  
**Materials Science and**  
**Engineering**  
**&**  
**Nanotechnology**

**November 18-19, 2019**  
**Amsterdam, Netherlands**

Scholarena LLC - USA

415 Grover Street, Warrensburg, MO - 64093, USA, Ph: +1-6602142040

## Day 1-November 18, 2019

08:00 - 08:25 Registrations

08:25 - 08:50 Opening Ceremony & Introduction

### Plenary talk

08:50 - 09:20

#### **Design and Applications of Advanced Structures: From 3D to 4D Printing**

*Daining Fang, Beijing Institute of Technology, China*

### Keynote Forum

09:20 - 09:45

#### **Design and Evaluation of 4DV3, a CXCR4 Targeting Peptide as an HIV Entry Inhibitor and a Ligand for Targeted Drug Delivery**

*Patrick J Sinko, The State University of New Jersey, USA*

09:45 - 10:10

#### **Novel Functionalities in Atomically Controlled Oxide Heterostructures by Pulsed Laser Deposition**

*Guus Rijnders, University of Twente, Netherlands*

10:10 - 10:35

#### **Development of Nanobody-Drug Conjugates**

*Paul Van Bergen En Henegouwen, Utrecht University, Netherlands*

Group Photo & Refreshment Break (10:35 - 10:55)

10:55 - 11:20

#### **Imaging and Analysis, From Micrometers to Nanometers and Beyond, - An Engine of Discovery and Innovation**

*Nan Yao, Princeton University, USA*

### Scientific Sessions

#### Session Introduction

**Session Chair:** Libor Matejka, Institute of Macromolecular Chemistry, Czech Republic

**Session Co-chair:** Thomas Walther Schmidt, Huangshi Industrial Zone, China

### Speaker Forum

11:20 - 11:40

#### **Dual Networks Involving Covalent Reversible Diels-Alder and Epoxy Networks as the Self-Healing Polymer Material**

*Libor Matejka, Institute of Macromolecular Chemistry, Czech Republic*

11:40 - 12:00

#### **Laying the Foundation of Industry 4.0 by Forward-Looking Planning of Innovation**

*Thomas Walther Schmidt, Huangshi Industrial Zone, China*

12:00 - 12:20

#### **Local Piezoelectric Properties of NBT- and KNN- based Perovskite Ceramics**

*Ekaterina Politova, Karpov Institute of Physical Chemistry, Russia*

12:20 - 12:40

#### **Surface Characteristics and Catalytic Activity of $\text{M}_{\text{Tio}_3}/\text{Tio}_2$ ( $\text{M} = \text{Co}, \text{Ni}$ ) Perovskite like Composites in the Process of Photo Destruction of 1,2-Dihydroxybenzene in Aqueous Solutions**

*Olga Kovalchukova, Peoples' Friendship University of Russia, Russia*

12:40 - 13:00

#### **Substrates Rubbing Technology: A Powerful Green Tool for Mass Production of Unique Two-Dimensional Materials and Devices**

*Gagik Shmavonyan, National Polytechnic University of Armenia, Armenia*

Lunch Break (13:00 - 14:00)

## Invited Forum

- 14:00 - 14:20**      **Novel Catalysts for Selective Hydrogenation of CC Triple Bond based on Pd Nanoparticles Immobilized in Phenylencarboxylate Frameworks (NH<sub>2</sub>)-MIL-53(Al)**  
*Vera Isaeva, National University of Science and Technology, Russia*
- 14:20 - 14:40**      **A New Method for the Separate Deposition of Two Types of Metal Nanoparticles on Metal Oxide Support**  
*Tomokazu Kiyonaga, National Institute of Technology, Japan*
- 14:40 - 15:00**      **Synergistic Effect of Poly[di(ethylene glycol) adipate] and Cellulose Nanocrystals on the Significantly Enhanced Crystallization of Poly(L-lactide) in their Fully Biodegradable Ternary Composite**  
*Zhaobin Qiu, Beijing University of Chemical Technology, China*
- 15:00 - 15:20**      **Photocatalytic Degradation of Bisphenol a Induced by Dense Nanocavities Inside Aligned 2D-TiO<sub>2</sub> Nanostructures**  
*Snejana Bakardjieva, Institute of Inorganic Chemistry, Czech Republic*
- 15:20 - 15:40**      **Dependence of the Structure of Silica Nanoparticles on the Conditions of their Synthesis**  
*Vladimir Masalov, Institute of Solid State Physics, Russia*
- 15:40 - 16:00**      **NIR/MR Dual-Modal Nanoparticle Probe for Imaging of Amyloid- $\beta$  in Alzheimer's Disease Mouse Model**  
*Man Shing Wong, Hong Kong Baptist University, Hong Kong*

Networking & Refreshment Break (16:00 - 16:20)

## Invited Forum

- 16:20 - 16:40**      **Improving the Reliability of Products under Multifactor Effects by the Composite Design of Surface Layers Using Materials with Thermoelastic Martensitic Transformations**  
*Dmitrenko D V, Kuban State Technological University, Russia*
- 16:40 - 17:00**      **Utilization of Fly Ash from Biomass Combustion in Fluidized Bed Boilers as Amendments Improving Soil Quality**  
*Elzbieta Jarosz Krzeminska, AGH University of Science and Technology, Poland*
- 17:00 - 17:20**      **Mechanical properties of Boehmite/Epoxy Composites**  
*Maximilian Jux, Technical University of Braunschweig, Germany*
- 17:20 - 17:40**      **Structural Energy Storage for Space Application**  
*Jan Petersen, DLR German Aerospace Center, Germany*
- 17:40 - 18:00**      **Eu/China Research on Eco-Composites for Aviation Interior and Secondary Structures**  
*Jens Bachmann, DLR German Aerospace Center, Germany*
- 18:00 - 18:20**      **Coupling Magnetic Hyperthermia and Electrochemistry for Releasing and Enhancing the Efficiency of Microarray Detection**  
*Jean Gamby, University of Paris Saclay/ Sorbonne Université/ CNRS, France*
- 18:20 - 18:40**      **Capacitive Type Humidity Sensor Based on PANI Decorated Cu-ZnS Hollow Microspheres**  
*Jolly Bhadra, Qatar University, Qatar*

Panel Discussions



## Keynote Forum

- 08:30 - 08:55**      **Computer Assisted Design of Nanomaterials for Green Chemistry**  
*Yun Wang, Griffith University, Australia*
- 08:55 - 09:20**      **The Influence of SiO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub> Nano-Particles on IFT between Crude Oil and Effluent Water Mixed with Seawater for Water Injection Application**  
*Meshal Alsamhan, Kuwait Institute for Scientific Research (KISR), Kuwait*

## Scientific Session/Tracks

### Session Introduction

**Session Chair:** Lydie Ploux, Strasbourg University / INSERM, France

**Session Co-chair:** Yun Wang, Griffith University, Australia

## Speaker Forum

- 09:20 - 09:40**      **Promises and Limitations of Bactericidal-Free Coatings for the Prevention of Bacterial Biofilm in Liquid**  
*Lydie Ploux, Strasbourg University / INSERM, France*
- 09:40 - 10:00**      **Biogenic Silver Nanoparticles from *Trachyspermum Ammi* (Ajwain) Seeds Extract for Catalytic Reduction of P-Nitrophenol to P-Aminophenol in Excess of NaBH<sub>4</sub>**  
*Neelu Chouhan, University of Kota, India*
- 10:00 - 10:20**      **Nano Galvanizing Technology**  
*Elena Galina, ZincNanoTech Ltd, Russia*
- 10:20 - 10:40**      **Capacitive Micro-Machined Ultrasonic Transducers (cMUT) for Ultrasound Imaging**  
*Brishbhan Panwar, DIT University, India*

Networking & Refreshment Break (10:40 - 11:00)

## Invited Forum

- 11:00 - 11:20**      **Features of the Stress-Strain State of the Method of Radial Active Alternating Bending under in Conditions of Multi-Cycle Plastic Processing**  
*Arseniy Raab, Ufa State Aviation Technical University, Russia*
- 11:20 - 11:40**      **Construction of an Array of Photonic Crystal Films for Visual Differentiation of Water/Ethanol Mixtures**  
*Paul C H Li, Simon Fraser University, Canada*
- 11:40 - 12:00**      **Standard Enthalpy of Formation, Thermal Behavior, and Specific Heat Capacity of 2HNIW•HMX Co-Crystals**  
*Jiao Qiang Zhang, Northwestern Polytechnical University, China*
- 12:00 - 12:20**      **Fabrication of Fluorescent Nanoprobes for Bioimaging Applications: Optical Properties and the Interactions with Bacterial and Cancer Cells**  
*Vladimir Djokovic, University of Belgrade, Serbia*
- 12:20 - 12:40**      **Path Planning, Ink-jet Printing and Sintering for Conductive Pattern on Undevelopable Surfaces**  
*Jin Huang, Xidian University, China*

12:40 - 13:00

## 1D Magnetic Nanostructures and their Potential Bioapplication

Egor Kaniukov, National University of Science and Technology, Russia

Lunch Break (13:00 - 14:00)

## Speaker Forum

14:00 - 14:20

### Metal Complexes of Hydroxybenzoic Acids as Precursors for $\text{TiO}_2$ Nano-Sized Photo Catalysts Modified by Transition Metal Cations

Olga Kovalchukova, Peoples' Friendship University of Russia, Russia

14:20 - 14:40

### Research and Development of Potassium-Ion Batteries

Elena Abramova, Skolkovo Institute of Science and Technology, Russia

## Voice of Young Researcher

14:40 - 15:00

### Hydrophobicity of Silver Microparticle Surfaces

Jan Macko, P. J. Safarik Univesrity in Kosice, Slovakia

15:00 - 15:20

### A Unified Theory for Brittle and Ductile Shear Mode Fracture

Luca Cimbaro, Imperial College London, UK

15:20 - 15:40

### *In-Situ* Synthesis of Nano Silver inside Chitosan Nano Fibrous Web for Water Filtration

Rahul R Gadkari, Indian Institute of Technology, India

15:40 - 16:00

### Femtosecond Inscribed Microstructures Inside the Polymer Material

Sanyogita Singh, Indian Institute of Technology Kanpur (IITK), India

16:00 - 16:20

### Investigation on Spark Plasma Sintering of Dissimilar Ceramic and Steel Laminated Composite Materials

Md. Mahadi Hasan, University of Wollongong, Australia

Networking & Refreshment Break (16:20 - 16:40)

## Poster Presentations

POSTER-001

### The Photo-Sensitization of Zinc Oxide by the Localized-Surface-Plasmon-Generated Hot Electron Tunneling from the Nanostructured Titanium Nitride Nanodisk Array

Kun Tang, Nanjing University, China

POSTER-002

### Design of Hydroxyapatite (HAP) based Composites Reinforced with Nano Magnetite Iron Oxide $\text{Fe}_3\text{O}_4$ for Biomedical Applications for Cancer Treatment

Dhurata Katundi, Supmeca-Paris, France

POSTER-003

### Design of High Strength TiAl Intermetallic based Composites Reinforced with Nanographene and Nano Boron through Sinter-Forging Process

Dhurata Katundi, Supmeca-Paris, France

POSTER-004

### New Chiral Metal-Mesogenic Nanosystems «Silver- Thiocholesterol» and their Adsorption Properties

Yana Gromova, Lomonosov Moscow State University, Russia

POSTER-005

### Czochralski Process Development of Magnet Heater for Single Crystal Si-ingot Growth and Less Oi 12ppma for High Efficiency Energy

Hyejun Jeon, Yeungnam University, Republic of Korea

POSTER-006	<b>Development of Modified Polymer Dot as Stimuli-Sensitive and <sup>67</sup>Ga Radio-Carrier, for Investigation of <i>In vitro</i> Drug Delivery, <i>In vivo</i> Imaging and Drug Release Kinetic</b> <i>Tayyeb Madrakian, Bu-Ali Sina University, Iran</i>
POSTER-007	<b>Redox-Mediated Fluorescent Probe based on the Carbon Dots for Indirect Detection of Periodate Ion</b> <i>Abbas Afkhami, Bu-Ali Sina University, Iran</i>
POSTER-008	<b>Quantum Dots Fabrication by Ion-Beam Exposure on Silica</b> <i>Anatoly Zatsepin, Ural Federal University, Russia</i>
POSTER-009	<b>Carbon Materials with Hierarchical Structure for Energy Storage</b> <i>Vladimir Masalov, Institute of Solid State Physics, Russia</i>
POSTER-010	<b>The Influence of Heat Treatment on the Reflection Spectra of Silica-Based Opal Structures</b> <i>Vladimir Masalov, Institute of Solid State Physics, Russia</i>

### E-Poster

POSTER-011	<b>Effect of Synthesis Temperature on the Properties of ZnO - CuO Composites</b> <i>Yevgeniya Kedruk, Kazakh National Research Technical University, Kazakhstan</i>
POSTER-012	<b>Researching of Flavonoids in the Leaves of Lingonberry (<i>Folium Vitisidæae</i> L), Currant (<i>Ribesnigrum</i> L), Peppermint (<i>Folia Menthae</i> L)</b> <i>Victoria Bonacheva, Surgut State University, Russia</i>

### Invited Forum

16:40 - 17:00	<b>Maximum Possible Densities of Random Sphere Packing within the Composite</b> <i>Zubko Yevgeniy, Americas Basalt Products - Canada Corp LLC, Ukraine</i>
17:00 - 17:20	<b>Spectral-Kinetic Selection of Energy Transfer Channels in Erbium-Doped Gadolinium Oxide Nanoparticles</b> <i>Yulia Kuznetsova, Ural Federal University, Russia</i>
17:20 - 17:40	<b>Mobile Health Diagnostics with Applications in Medicine</b> <i>Hadi Shafiee, Brigham and Women's Hospital, Harvard Medical School, USA</i>
17:40 - 18:00	<b>Magnetic Ferrite Nanoparticles and Superparticles as Nanotheranostics</b> <i>Catherine Dendrinou Samara, Aristotle University of Thessaloniki, Greece</i>
18:00 - 18:20	<b>Soft Magnetic Wires for Sensor Applications</b> <i>Arcady Zhukov, University of the Basque Country, UPV/EHU, Spain</i>

### Panel Discussions

### Closing and Award Ceremony

# Program at a Glance

SCON Materials Science & Nanotechnology - 2019



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## Day-1 (Nov 18, 2019)

08:00

Registrations

08:25

08:25

Opening Ceremony  
& Introduction

08:50

08:50

Plenary talk

09:20

09:20

Keynote Forum

10:35

10:35

Group Photo & Break

10:55

10:55

Keynote & Speaker  
Forum

13:00

14:00

Invited Forum

16:00

16:00

Break

16:20

16:20

Speaker Forum

18:40

Panel Discussion

13:00-14:00 Lunch

## Day-2 (Nov 19, 2019)

08:30

Keynote Forum

09:20

09:20

Speaker Forum

11:00

10:40

Break

11:00

11:00

Invited Forum

13:00

13:00-14:00 Lunch

14:00

Speaker Forum

14:40

14:40

Voice of Young  
Researcher

16:20

16:20

Poster Session &  
Break

16:40

16:40

Invited Forum

18:20

Panel Discussion

Closing and Award Ceremony

### Venue Address:

Hyatt Place  
Amsterdam, Netherlands

### Organizing Committee:

Patrick J Sinko, The State University of New Jersey, USA  
Guus Rijnders, University of Twente, Netherlands  
Yun Wang, Griffith University, Australia  
Gagik Shmavonyan, National Polytechnic University of Armenia, Armenia

**Moderator:** Elena Abramova, Skolkovo Institute of Science and Technology, Russia

### Day 1

**Session Chair:** Libor Matejka, Institute of Macromolecular Chemistry, Czech Republic  
**Session Co-Chair:** Thomas Walther Schmidt, Huangshi Industrial Zone, China

### Day 2

**Session Chair:** Lydie Ploux, Strasbourg University / INSERM, France  
**Session Co-Chair:** Yun Wang, Griffith University, Australia





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# SCON 2<sup>nd</sup> International Conference on Materials Science and Nanotechnology

November 18-19, 2019 | Amsterdam, Netherlands



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