


RAN

CONGRESS

5TH WORLD CONGRESS ON RECENT ADVANCES IN NANOTECHNOLOGY (RAN'20)

October 11, 2020 - October 13, 2020 | Virtual Conference

THE RAN'20 CONGRESS IS COMPOSED OF 2 CONFERENCES

NDDTE
'20

IC
NNFC'20

OCTOBER 11

OCTOBER 12

OCTOBER 13

OUR PROGRAM SCHEDULE IS BASED ON EASTERN TIME
(ET - OTTAWA TIME)

OCTOBER 11

10:00 AM – 12:00 PM Registrations

RAN'20 Scientific Committee Chair



Dr. Wolfgang Ensinger

Technische Universität Darmstadt,
Germany

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OCTOBER 12

8:00 AM - 9:00 AM	Registrations
9:00 AM - 9:10 AM	Official Opening
	Dr. Wolfgang Ensinger, Technische Universität Darmstadt, Germany
9:10 AM - 10:10 AM	PLENARY LECTURE
	<u>Nanophase-separated Ionomers For Energy And Environment</u> Dr. Philippe Knauth, Aix Marseille University, France
10:10 AM - 10:20 AM	BREAK
10:20 AM - 11:15 AM	NDDTE KEYNOTE LECTURE
	<u>Impact of Nanoparticles on Pathogenic Fung</u> Dr. Josef Jampilek, Comenius University, Slovakia
11:15 AM - 11:25 AM	Break
11:25 AM - 12:10 PM	SESSION <u>Nanotechnology: Cancer and Drug Delivery</u>

PLENARY LECTURE

OCTOBER 12 | 9:10 AM - 10:10 AM | SESSION CHAIR: DR. WOLFGANG ENSINGER, TECHNISCHE UNIVERSITÄT DARMSTADT, GERMANY



Titles: Nanophase-separated Ionomers For Energy and Environment

[Dr. Philippe Knauth, Aix Marseille University, France](#)

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Philippe Knauth obtained a PhD in physical chemistry from Saarland University (Germany) in 1987 and the habilitation in materials science at Aix Marseille University in 1996.

He is currently Professor of Materials Chemistry and Head of the Department of Chemistry at Aix Marseille University. He is fellow of the French Chemical Society (“membre distingué”) and was appointed Visiting Scholar at MIT (Cambridge, USA) in 1997-98 and 2013, invited Professor at the National Institute of Materials Science (Tsukuba, Japan) 2007 and 2010, and invited Professor at the University of Rome Tor Vergata in 2009 and 2011.

He is member of the editorial boards of the “Journal of Electroceramics”, “Membranes”, “Frontiers in Energy Research”, and the “Journal of Nanomaterials”.

His research interests include solid state ionics and ionic conduction near interfaces; nanostructured materials for energy storage and conversion; polymer electrolytes for electrochemical energy technologies; lithium-ion microbatteries based on TiO_2 nanotubes and nanocrystalline CeO_2 .

190 articles in international journals (7300 citations, h index = 43), 7 co-edited books, 6 patents and 75 invited, keynote and plenary talks at international conferences.. Wei Lu is Professor at the Mechanical Engineering Department, University of Michigan, Ann Arbor, and Director of research center: Advanced Battery Coalition for Drivetrains. He uses multi-scale and multi-physics approaches to analyze battery degradation.

For more information please visit: <https://rancongress.com/program>

KEYNOTE LECTURE

OCTOBER 12 | 10:20 AM - 11:15 AM | SESSION CHAIR: DR. WOLFGANG ENSINGER, TECHNISCHE UNIVERSITÄT DARMSTADT, GERMANY



Titles: Impact of Nanoparticles on Pathogenic Fung

[Dr. Josef Jampilek, Comenius University, Slovakia](#)

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Josef Jampilek completed his Ph.D. degree in Medicinal Chemistry at the Faculty of Pharmacy of the Charles University (Czech Republic) in 2004. In 2004-2011, he worked in expert and managerial posts in the R&D Division of the pharmaceutical company Zentiva (Czech Republic). Prof. Jampilek deepened his professional knowledge at the Medicinal Chemistry Institute of the Heidelberg University (Germany) and at multiple specialized courses. In 2017, he was designated as a Full Professor of Medicinal Chemistry. At present he works at the Regional Centre of Advanced Technologies and Materials, Palacky University in Olomouc (Czech Republic) and the Faculty of Natural Sciences, Comenius University in Bratislava (Slovakia). In addition, he is a visiting professor at the University of Silesia in Katowice (Poland) and Hong Kong Baptist University (Hong Kong SAR, China) and an invited professor/expert at various higher educational institutions. He is an author/co-author of more than 30 patents/patent applications, more than 200 peer-reviewed scientific publications, 7 university textbooks, more than 30 chapters in monographs, and many invited lectures at international conferences and workshops. He also received several awards for his scientific results, e.g., from Aventis, Elsevier, Willey, Sanofi and FDA. The research interests of Prof. Jampilek include design, synthesis, and structure-activity relationships of heterocyclic compounds as anti-invasive and anti-inflammatory agents as well as nanosystems. He is also interested in ADME, drug bioavailability and solid-state pharmaceutical analysis.

SESSION

NANOTECHNOLOGY: CANCER AND DRUG DELIVERY

OCTOBER 12 | 11:25 PM - 12:10 PM | SESSION CHAIR: DR. JOSEF JAMPILEK, COMENIUS UNIVERSITY, SLOVAKIA

Titles: Designed for Dentistry, Articaine in NLC Improves Anaesthesia At Inflamed Tissues

NDDTE 112

Time: 11:25 AM - 11:30 PM

Presenter: Gustavo H Rodrigues da Silva, University of Aveiro, Spain

Authors: Gustavo H. Rodrigues da Silva, Julia B. P. Lemes, Gabriela Geronimo, Iola F. Duarte, Carlos A. Parada, Eneida de Paula

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Titles: Development of Organoid-on-a-chip Platform for Preclinical Drug Screening

NDDTE ID 117

Time: 11:30 AM - 11:50 AM

Presenter: Sandra Carvalho, INL - International Iberial Nanotechnology Laboratory, Portugal

Authors: Sandra Carvalho, Diana Pinho, Ana Vila

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Titles: Fullerene (C60) Evaluation for Photodynamic Therapy

NDDTE ID 122

Time: 11:50 AM - 12:10 PM

Presenter: Seyed Mohammadreza Heidari, Civil and Environmental Engineering, Michigan State University, United States

Authors: Seyed M. Heidari, Mohadese Golsorkh

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OCTOBER 13

9:00 AM - 9:45 AM ICNNFC KEYNOTE LECTURE

Multifunctional Materials for Emerging Technologies

Dr. Federico Rosei, Institut National de la Recherche Scientifique (INRS), Canada

9:45 AM - 10:30 AM ICNNFC KEYNOTE LECTURE

Nanometric Building Blocks In Composite Ionic Conductors

Dr. Maria Luisa Di Vona, University of Rome Tor Vergata, Italy

10:30 AM - 10:40 AM BREAK

10:40 AM - 11:25 AM NDDTE KEYNOTE LECTURE

Nanotechnology as a Tool to help Macromolecules Overcoming Biological Barriers

Dr. Maria Josè Alonso, Universidade de Santiago de Compostela, Spain

11:25 AM - 12:00 PM SESSION

Nanomaterials Applications

12:00 PM - 12:10 PM Break

12:10 PM - 1:00 PM SESSION

Computational Nanotechnology

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KEYNOTE LECTURE

OCTOBER 13 | 9:00 AM - 9:45 AM | SESSION CHAIR: DR. WOLFGANG ENSINGER, TECHNISCHE UNIVERSITÄT DARMSTADT, GERMANY



Titles: Multifunctional Materials for Emerging Technologies

[Dr. Federico Rosei, Institut National de la Recherche Scientifique \(INRS\), Canada](#)

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Federico Rosei received MSc (1996) and PhD (2001) degrees from the University of Rome “La Sapienza”. He held the Canada Research Chair (Junior) in Nanostructured Organic and Inorganic Materials (2003–2013) and since May 2016 he holds the Canada Research Chair (Senior) in Nanostructured Materials. He is Professor at the Centre Énergie, Matériaux et Télécommunications, Institut National de la Recherche Scientifique, Varennes (QC) Canada, where he served as Director from July 2011 to March 2019. Since January 2014 he holds the UNESCO Chair in Materials and Technologies for Energy Conversion, Saving and Storage.

Dr. Rosei’s research interests focus on the properties of nanostructured materials, and on how to control their size, shape, composition, stability and positioning when grown on suitable substrates. He has extensive experience in fabricating, processing and characterizing inorganic, organic and biocompatible nanomaterials. His research has been supported by multiple funding sources from the Province of Quebec, the Federal Government of Canada as well as international agencies, for a total in excess of M\$ 16. He has worked in partnership with over twenty Canadian R&D companies. He is co-inventor of three patents and has published over 325 articles in prestigious international journals (including Science, Nature Photonics, Proc. Nat. Acad. Sci., Adv. Mater., Angew. Chem., J. Am. Chem. Soc., Adv. Func. Mater., Adv. En. Mat., Nanolett., ACS Nano, Biomaterials, Small, Phys. Rev. Lett., Nanoscale, Chem. Comm., Appl. Phys. Lett., Phys. Rev. B, etc.), has been invited to speak at over 320 international conferences and has given over 240 seminars and colloquia, over 55 professional development lectures and 40 public lectures in 45 countries on all inhabited continents. His publications have been cited over 13,000 times and his H index is 58.

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KEYNOTE LECTURE

OCTOBER 13 | 9:45 AM - 10:30 AM | SESSION CHAIR: DR. WOLFGANG ENSINGER, TECHNISCHE UNIVERSITÄT DARMSTADT, GERMANY



Titles: Nanometric Building Blocks in Composite Ionic Conductors

[Dr. Maria Luisa Di Vona, University of Rome Tor Vergata, Italy](#)

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Maria Luisa Di Vona, Laurea in Chemistry cum Laude, University of Rome La Sapienza. Professor of Chemistry at the University of Rome Tor Vergata. Responsible of the International Laboratory “Ionomer Materials for Energy (LIME)” at the Department of Industrial Engineering,

Invited Professor at the University Aix Marseille, France and the National Institute for Materials Science NIMS, Japan.

Research topics:

- Solid electrolytes for energy (fuel cells, electrolyzers, redox flow batteries, batteries)
- Organic-inorganic hybrid materials for energy, environmental and biomedical applications
- Materials for gas sensors

Publications: 179 (142 in international journals, 5 chapters, 2 books, 3 patents, 27 in conference proceedings) H index: 34

KEYNOTE LECTURE

OCTOBER 13 | 10:40 AM - 11:25 AM | SESSION CHAIR: DR. WOLFGANG ENSINGER, TECHNISCHE UNIVERSITÄT DARMSTADT, GERMANY



Titles: Nanotechnology as a Tool to help Macromolecules Overcoming Biological Barriers

[Dr. Maria José Alonso, Universidade de Santiago de Compostela, Spain](#)

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María José Alonso's lab has pioneered numerous discoveries in the field of Pharmaceutical Nanotechnology and nanomedicine. She has coordinated several research consortia financed by the WHO, the Gates Foundation and the European Commission. She is the author of 290 scientific contributions with more than 29,400 cites (H factor 90) and the inventor of 22 patent families. Because of the quality of her scientific articles she has been among the TOP TEN in Pharmacology (Times Higher Education international ranking, 2010). Recently, she become part of the "Power List" of the most influential researchers in the field of Biopharmaceuticals (The Medicine Maker, 2020)

She has served to the Release Society (CRS) for 15 years and she is currently Past President of the Controlled Release Society (CRS). She is also Editor-in-Chief of the Drug Delivery and Translational Research, an official journal of the CRS, and she is part of the editorial board of 11 journals.

She has received 33 awards, among them the "Research and Education Excellence Medal" granted by the Spanish Government, the "Jaime I Award", the General Council of Pharmacy Medal, and other awards granted by scientific organizations, such as the "Marie Junot Award" of the APGI, the "Founders Award", the "Outstanding Service Award" and the "Women in Sciences Award" of the CRS. She was also recently awarded by the AIM-HI Women's Venture Competition program born out of the National Foundation for Cancer Research (NFCR).

She is a fellow of the American Institute for Medical and Biological Engineering (AIMBE) and a Fellow of the Controlled Release Society, a member of the Royal Academy of Pharmacy of Spain, the Royal Academy of Sciences of Galicia, the Royal Academy of Pharmacy in Galicia and a member of the US National Academy of Medicine (NAM).

She was the Vice-rector of Research and Innovation of the USC (2006-10).

SESSION

NANOMATERIALS APPLICATIONS

OCTOBER 13 | 11:25 AM - 12:00 PM | CHAIR: MR. SEYED MOHAMMADREZA HEIDARI,
MICHIGAN STATE UNIVERSITY, USA

Titles: Superparamagnetic Iron Oxide Nanoparticles (SPIONs) as Cores for Molecularly Imprinted Polymers (MIP) in Trace Analysis

ICNNFC ID 131

Time: 11:25 AM - 11:30 AM

Presenter: Maria Guć, Adam Mickiewicz University, Poland

Authors: Maria Guć, Grzegorz Schroeder

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Titles: CdS, CdSe and PbS Nanostructured Thin Films Synthesized by Chemical Methods for Photovoltaic Applications

ICNNFC ID 153

Time: 11:30 AM - 11:50 AM

Presenter: Yurii Vorobiov, CINVESTAV IPN, Unidad Queretaro, Mexico

Authors: Yuri Vorobiev, Francisco Willars-Rodriguez, Fernando Chimal-Moreno, Rafael Ramírez-Bon, Pavel Vorobiev

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Titles: Synthesis and Characterization of Bimetallic Ru-Re Catalysts Supported on Oxide Carriers

ICNNFC ID 138

Time: 11:50 AM - 11:55 AM

Presenter: Szymon Smykała, Silesian University of Technology, Poland

Authors: Szymon Smykała, Katarzyna Adamska, Mirosława Pawlyta

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Titles: Adsorption Of PET On Concrete Nano-structures: An In-silico Assay

ICNNFC ID 155

Time: 11:55 AM - 12:00 PM

Presenter: Tania Lizbeth Barcenas Ramírez, Universidad de Guanajuato, Mexico

Authors: L. Bárcenas, F. Aguilera-Granja, G. Ramírez-García, E. Díaz-Cervantes

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SESSION

COMPUTATIONAL NANOTECHNOLOGY

OCTOBER 13 | 12:10 PM - 1:00 PM | CHAIR: MR. SEYED MOHAMMADREZA HEIDARI,
MICHIGAN STATE UNIVERSITY, USA

Titles: Comparative Analysis Of Sensory Activity Of Carbon Nanotubes With Boundary Modification

ICNNFC ID 125

Time: 12:10 PM - 12:15 PM

Presenter: Natalia Boroznina, Volgograd State University, Russia

Authors: Natalia Boroznina, Irina Zaporotskova, Sergei Boroznin, Lev Kozhitov, Pavel Zaporotskov

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Titles: Theoretical Study of Metal Composite on the Monolayer PPAN Basis, Containing Pair Metal Atoms Cu-Co and Cu-Ni

ICNNFC ID 126

Time: 12:15 PM - 12:35 PM

Presenter: Irina Zaporotskova, Volgograd State University, Russia

Authors: Irina Zaporotskova, Daniil Radchenko, Sergei Boroznin, Natalia Boroznina, Lev Kozhitov, Pavel Zaporotskov

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Titles: Influence of the Boron Impurities in Carbon Nanotubes on the Atomic and Molecular Hydrogen Sorption Processes

ICNNFC ID 127

Time: 12:35 PM - 12:40 PM

Presenter: Sergei Boroznin, Volgograd State University, Russia

Authors: Sergei Boroznin, Irina Zaporotskova, Natalia Boroznina, Lev Kozhitov, Daria Dolgova

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Titles: Improving Interfacial Shear Strength in Graphene Reinforced Copper Nanocomposites

ICNNFC ID 156

Time: 12:40 PM – 01:00 PM

Presenter: Shaoyu Zhao, RMIT University, Australia

Authors: Shaoyu Zhao, Yingyan Zhang, Jie Yang, Sritawat Kitipornchai

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