RAN
CONGRESS

PROCEEDINGS OF THE 4TH WORLD CONGRESS ON RECENT ADVANCES IN NANOTECHNOLOGY (RAN'19)

April 14 - 16, 2019 | Rome, Italy

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WELCOME MESSAGE FROM THE CONFERENCE CHAIR

On behalf of the International Academy of Science, Engineering and Technology (International ASET Inc.), the organizing committee would like to welcome you to the 4th World Congress on Recent Advances in Nanotechnology (RAN'19).

RAN is aimed to become one of the leading international annual congresses in the field of nanotechnology. This congress will provide excellent opportunities to the scientists, researchers, industrial engineers, and university students to present their research achievements and to develop new collaborations and partnerships with experts in the field.

While each conference consists of an individual and separate theme, the 2 conferences share considerable overlap, which prompted the organization of this congress. The goal of this undertaking is to bring together experts in each of the specialized fields, and at the same time allow for cross pollinations and sharing of ideas from the other closely related research areas.

We thank you for your participation and contribution to the 4th World Congress on Recent Advances in Nanotechnology (RAN'19). We wish you a very successful and enjoyable experience.

Dr. Wolfgang Ensinger
Congress Chair and Proceedings Editor
RAN'19

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ABOUT RAN'19

RAN is aimed to become one of the leading international annual congresses in the field of nanotechnology.
This congress will provide excellent opportunities to the scientists, researchers, industrial engineers, and university students to present their research achievements and to develop new collaborations and partnerships with experts in the field.

There are 2 conferences included in the RAN Congress:

ICNNFC'19 - 4th International Conference on Nanomaterials, Nanodevices, Fabrication and Characterization
NDDTE'19 - 4th International Conference on Nanomedicine, Drug Delivery, and Tissue Engineering

While each conference consists of an individual and separate theme, the 2 conferences share considerable overlap, which prompted the organization of this congress. The goal of this undertaking is to bring together experts in each of the specialized fields, and at the same time allow for cross pollinations and sharing of ideas from the other closely related research areas.

RAN is an acronym for **R**ecent **A**dvances in **N**anotechnology.

The proceedings is published in Ottawa, Canada.

All papers were peer-reviewed

The congress proceedings is published under an ISSN and ISBN number

Each paper is assigned a unique DOI number by Crossref

The conference proceedings is indexed by Scopus and Google Scholar

The proceedings is permanently archived in Portico (one of the largest community-supported digital archives in the world)

Google Scholar Scopus Crossref PORTICO

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SCIENTIFIC COMMITTEE

We would like to thank the following for accepting to act as a member of the Scientific Committee for the RAN'19 Congress:

Scientific Committee Members for ICNNFC'19

- **Dr. Zainab Booq,** King Saud University, Saudi Arabia
- **Dr. Cyrille Boyer,** University of New South Wales, Australia
- **Dr. Daolun Chen,** Ryerson University, Canada
- **Dr. Volkan Eskizeybek,** Çanakkale Onsekiz Mart University, Turkey
- **Dr. Ille C. Gebeshuber,** Vienna University of Technology, Austria
- **Dr. Gülten Gürdağ,** Istanbul University, Turkey
- **Dr. Bilgin Kaftanoğlu,** Atilim University, Turkey
- **Dr. Byeong Hee Kim,** Kangwon National University, Korea
- **Dr. Nipin Kohli,** Guru Nanak Dev University, India
- **Dr. Andre Lee,** Michigan State University, USA
- **Dr. Cristian Miranda,** Empresa de Servicios Tecnológicos (EST) - Universidad de Concepcion, Chile
- **Dr. Farshad Moradi,** Aarhus University, Denmark
- **Dr. Petr Němec,** University of Pardubice, Czech Republic
- **Dr. George Palasantzas,** University of Groningen, Netherlands, Netherlands
- **Dr. Reyes Sierra,** The University of Arizona, USA
- **Dr. Silvio Silverio,** Universidade de São Paulo, Brazil
- **Dr. Thirumany Sritharan,** Nanyang Technological University, Singapore
- **Dr. C. Suryanarayana,** University of Central Florida, USA
- **Dr. Takuya Tsuzuki,** Australian National University, Australia
- **Dr. Olaf Walter,** European Commission, DG Joint Research Centre, Germany
- **Dr. Jie Yang,** RMIT University, Australia

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SCIENTIFIC COMMITTEE

We would like to thank the following for accepting to act as a member of the Scientific Committee for the RAN'19 Congress:

Scientific Committee Members for NDDTE'19

- **Dr. Jingjiao Guan,** Florida State University, USA
- **Dr. Todd Giorgio,** Vanderbilt University, USA
- **Dr. Evren Homan,** Ege University, Turkey
- **Dr. Josef Jampílek,** Comenius University in Bratislava, Slovakia
- **Dr. Mariko Kawai,** Osaka Dental University, Japan
- **Dr. Hyung-Suk Lee ,** Yonsei University, South Korea
- **Dr. Serena Mazzucchelli,** University of Milan, Italy
- **Dr. Kunn Hadinoto Ong,** NTU, Singapore
- **Dr. Moganavelli Singh,** University of KwaZulu-Natal (Westville), South Africa
- **Dr. Marta Truffi,** University of Milan, Italy

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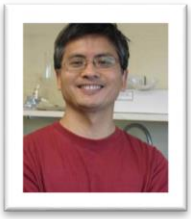
KEYNOTE SPEAKERS

The keynote information for the 4th World Congress on Recent Advances in Nanotechnology (RAN'19) is as follows:

Keynote Speakers

Dr. Serena Mazzucchelli
University of Milan, Italy
NDDTE'19 Keynote Speaker

Dr. Kunn Hadinoto Ong
Nanyang Technological University , Singapore
NDDTE'19 Keynote Speaker



Dr. Christopher Lan
University of Ottawa, Canada
ICNNFC'19 Keynote Speaker

Dr. Moganavelli Singh
University of KwaZulu-Natal, South Africa
NDDTE'19 Keynote Speaker

Dr. Olaf Walter
European Commission, DG Joint Research Centre, Germany
ICNNFC'19 Keynote Speaker

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NDDTE'19 KEYNOTE SPEAKER

Dr. Serena Mazzucchelli, University of Milan, Italy

Topic of Keynote : Ferritin-Based Nanodrug for the Treatment of Breast Cancer

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Serena Mazzucchelli, PhD, is assistant professor in Biochemistry at the University of Milan. She received her bachelor degree in Biological Sciences in 2004, master degree in Biology in 2006 and PhD in Biological Sciences in 2009 at the Department of Biotechnology and Biosciences (University of Milan-Bicocca-Italy). From 2009 to 2012 she did a post-doc position at the Department of Biomedical and Clinical Sciences “L. Sacco” (University of Milan-Italy). From 2012 to 2015 she has been researcher at the Nanomedicine Unit of the “L. Sacco” University Hospital. Today, SM is a fixed-term researcher at the Nanomedicine laboratory of the University of Milan carrying out her research activity focused on the development of nanodevices for diagnosis and therapy of breast cancer at the Department of Biomedical and Clinical Sciences “L. Sacco”. SM is author of 37 paper in peer-review journals.

NDDTE'19 KEYNOTE SPEAKER

Dr. Moganavelli Singh, University of KwaZulu-Natal, South Africa **Topic of Keynote:** An Overview of Nanoparticles in Gene and Drug Delivery In Vitro

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Prof Moganavelli Singh graduated with a PhD in Biochemistry from the University of KwaZulu-Natal in 2006. She is currently an Associate Professor, Researcher and Head of the Non-Viral Gene and Drug Delivery Laboratory at the University of KwaZulu-Natal, Durban, South Africa. Her research interests are interdisciplinary, and include the development and biological evaluation of novel non-viral (polymeric, lipid and inorganic) nanoparticles as potential gene and drug delivery vehicles for cancer gene therapy. Among the nanoparticles currently under evaluation in her laboratory are gold, silver, selenium, and magnetic iron nanoparticles. In addition she is also involved in the evaluation of the anti-cancer activities of chemically synthesized and medicinal plant compounds.

NDDTE'19 KEYNOTE SPEAKER

Dr. Kunn Hadinoto Ong, Nanyang Technological University , Singapore

Topic of Keynote: Amorphous drug nanoparticle complex as bioavailability enhancement strategy of poorly soluble drugs

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Dr. Kunn Hadinoto is currently an associate professor in the School of Chemical and Biomedical Engineering at Nanyang Technological University (Singapore). He has a bachelor degree in chemical engineering from University of Washington (USA) and PhD also in chemical engineering from Purdue University (USA). His current research focuses on sustainable pharmaceutical engineering and formulation of amorphous nanopharmaceuticals.

ICNNFC'19 KEYNOTE SPEAKER

Dr. Olaf Walter, European Commission, DG Joint Research Centre, Germany

Topic of Keynote: Actinide dioxide nanoparticles: low temperature synthesis for materials

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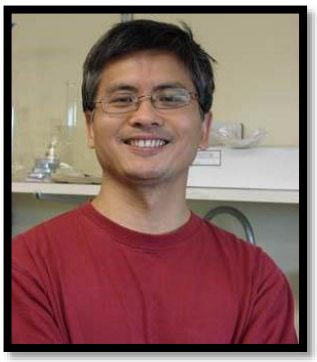
At the end of 1994 Olaf concluded his PhD at the University of Heidelberg with Prof. G. Huttner. Then he joined the Bertini group in Florence until March 1997. Afterwards he worked at the Forschungszentrum Karlsruhe (today: KIT) in the field of catalysis and process development where in 2000 he was awarded with a permanent position. In 2011 he moved to the JRC-Karlsruhe (formerly: ITU) where since 2013 he is employed as research official in the field of syntheses and characterisation. His research interests are the complex and organometallic chemistry of the actinides, and their application towards the synthesis of nano-sized materials. He is (co-)author of ca 140 journal contributions.

ICNNFC'19 KEYNOTE SPEAKER



Dr. Christopher Lan, University of Ottawa, Canada

Topic of Keynote: Light-Dependent Biosynthesis of Silver Nanoparticles Mediated by Cell Extract of Neochloris oleoabundans: an Investigation on Mechanism

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He is currently working as an assistant professor and a director of "Nanobiomagnetics and Bioelectronics Laboratory (NB2L)" in the department of electrical engineering at the University of South Carolina (UofSC), Columbia, USA. In addition, he has a joint appointment with biomedical engineering program in the college of engineering and computing at UofSC. Prior to joining the UofSC, he was an associate professor in the department of neurosurgery at the Seoul National University (SNU) college of medicine, Seoul, KOREA, and he was also an assistant professor in the department of electrical and computer engineering at the National University of Singapore (NUS) (Singapore) for 9 years before joining SNU. While he was at the SNU, he was doing clinically translatable biomedical researches to develop magnetic nanofluid hyperthermia systems for brain tumors and bioelectronics engineering researches to design and commercialize new types of bioinstrumentations and medical devices/electronics for neurodegenerative diseases, neuromodulation, and cancers. Furthermore, while he was at the NUS, he established "Biomagnetics Laboratory (BML)" in 2005 to support basic applied researches and education in the field of biomagnetics, nanomedicine, and applied biospintronics.

LIST OF PAPERS

The following papers were presented at the 4th World Congress on Recent Advances in Nanotechnology (RAN'19).

Nanomaterials, Nanodevices: Fabrication, Characterization and Application

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Nanotechnology and Biomedical Applications

Half-Chain Trastuzumab Nanoconjugates Enhance Antitumor Activity in HER2+ breast cancer
Author: Marta Truffi, Miriam Colombo, Luca Sorrentino, Serena Mazzucchelli, Laura Pandolfi, Arianna Bonizzi, Davide Prosperi, Fabio Corsi

The Efficacy of a Transferrin Targeted Dual Loaded Anticancer Drug Delivery System Using Functionalized Gold Nanoparticles as Delivery Vehicles
Author: L. L. David, M. Singh

Chitosan-Nanoparticles Loaded with Insulin in Buccal Films: Preparation and Characterization
Author: Nusaiba Al-Nemrawi, Sara Alsharif, Karem AlZoubi

Cetuximab-Conjugates Nanoparticles for the Treatment of Triple Negative Breast Cancer
Author: Arianna Bonizzi, Miriam Colombo, Maria Antonietta Rizzuto, Chiara Pacini, Laura Pandolfi, Marta Truffi, Matteo Monieri, Francesco Catrambone, Luisa Fiandra, Fabio Corsi, Davide Prosperi, Serena Mazzucchelli

Cisplatin Conjugated Silver Nanoparticles Enhance Anticancer Activity in Breast Cancer Cells
Author: Sayuri Gounden, Moganavelli Singh

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Nanotechnology and Drug Delivery

Polymeric Nanoparticles and Nanofibers for Local Delivery of Poorly Soluble Drugs
Author: Aiman Abu Ammar

Development of Nanovectors for the Targeted Delivery in Anopheles Mosquitoes of Drugs against Plasmodium Parasites
Author: Elisabet Martí Coma-Cros, Christian Grandfils, Chantal Sevrin, Jos Paulusse, Naomi Hamelmann, Inga Siden-Kiamos, John Vontas, Lefteris Spanos, Fatima Nogueira, Henrique Silveira, Sarah Delacour, Luis Izquierdo, Krijn Paaijmans, Amedea Manfredi, Paolo Ferruti, Elisabetta Ranucci, Xavier Fernàndez-Busquets

A Microfluidic 3D Cell Culture System for Drug Discovery Studies
Author: Emre Altinagac, Volkan Yalman, Murat Demirbilek, Huseyin Kizil

Nano-Bio-Interaction of Gold Nanoparticles with Cancer Cells and Impacts on Biophysical Properties
Author: Ahmad Sohrabi Kashani, Simona Badilescu, Alisa Piekny, Muthukumaran Packirisamy

Dichloro(1,2-diaminocyclohexane) Platinum(II) (DACHPt)-Loaded Gold Nanoshells for Chemo-Photothermotherapy of Colorectal Cancer
Author: Shin-Yu Lee, Ming-Jium Shieh

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Modification of Frost-Resistant Plastic Lubricants Using Few- and Multi-Layered Graphene
Author: Alexey Tkachev, Gaukhar Zhumagalieva, Zaman Al-Hilo, Nariman Memetov, Evgeny Galunin, Vladimir Pershin

2D Materials Based Hybrid for Efficient Removal of Heavy Metal Ions
Author: Agnieszka Mikołajczak, Samanta Witomska, Włodzimierz Czepa, Artur Ciesielski, Paolo Samorì

Improvement of Oxygen Transfer Capacity by Formation of Crystal Defect on Red-Mud
Author: Byung Chan Kwon, Misook Kang, Tae Jin Lee, No-Kuk Park, Jeom-In Baek, Ui-Sik Kim, Ho-Jung Ryu

A molecularly imprinted polymer coated-nanocomposite of magnetic nanoparticles for organic compounds recognition
Author: Maria Guć, Mateusz Pawlaczyk, Grzegorz Schroder

Investigation of Carbon Deposition over Ni-Based Catalysts Promoted with CeO2 in Steam and Autothermal Reforming of Toluene
Author: Young Jin Lee, Byung Chan Kwon, Seung Woo Lee, No-Kuk Park, Tae Jin Lee, Suk Hwan Kang, Bumui Hong

Reduction of Methylene Blue, Methyl Orange and 4-Nitrophenol Using Ag Nanoparticles
Author: Adrian Radoń, Rafał Babilas, Dariusz Łukowiec

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SPONSORS

International ASET Inc. would like to thank the following sponsors for their support of RAN'19:

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JOURNAL PUBLICATION

Selected articles from the congress will be published in the following journal after a secondary review process:

IJTAN - International Journal of Theoretical and Applied Nanotechnology

The publication fee will be waived for papers that win the Best Paper Award. Other attendees will receive a 25% discount towards the publication fee of the journal.

This journal has adopted to the open-access model, meaning all free access to the journal's articles and content with no need for subscription. This ensures larger audience and therefore higher citations.

Users are allowed to read, download, copy, distribute, print, search, or link to the full texts of the articles in this journal without asking prior permission from the publisher or the author. This is in accordance with the BOAI defi nition of open access.

All published papers of IJTAN will be submitted to Google Scholar, Microsoft Academic Search, Open J-Gate, Mendeley, Index Copernicus International, Academic Index, Mendeley, Primo Central, and Genomics JournalSeek for possible indexing. Additionally, they will be permanently archived in Portico (one of the largest community-supported digital archives in the world) and will be assigned unique DOIs.

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ETHICS & MALPRACTICE

At International ASET Inc., we take matters that relate to ethics in publishing very seriously. We believe that the peer-review publication process is a vital building block of academia, and its integrity must be maintained at all costs, which is why every article will be peer-reviewed by several experts in the field. Under peer-review, experts in the related fields are required to provide opinions and comments on the improvements of the submissions.

We are pleased to announce that Avestia Publishing (a publisher of International ASET Inc.) has been approved by the Committee on Publication Ethics (COPE). We are proud of our efforts towards abiding by the guidelines of ethics, integrity, and high standards in publishing.

Following are the ethics guidelines set by the organizers for the authors and the reviewers of the conference:

Scientific Committee

Scientific committees consisting of experts in the fields are established. The committees oversee the peer-review and publication process. To see the scientific committee members, please follow the link: Scientific Committee

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One or more reviewer, scientific committee member, or chair, (internal or external), are responsible for evaluating the relevance of the submitted manuscripts to the proceedings, technical and scientific merit, originally, and impact. These evaluations are to be carried out regardless of ethnicity, religion, gender, sexual orientation, political beliefs, and institutions. Successive to peer-review, the Chair has full authority and is solely responsible for the published content and the process thereof.

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Scientific committee member(s) and publishing staff may not disclose manuscripts or their content, directly or indirectly, to anyone other than individuals invited to review the manuscript (whether they accept or not), other reviewers of the same publications, and publishing staff.

Conflicts of Interest
Scientific committee member(s) and publishing staff may not utilize the contents of submitted manuscripts whether accepted or rejected, directly or indirectly for their own research purposes without prior written consent by the authors.

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Reviewers

Contribution to Decisions

In order for final decisions to be made regarding acceptance or rejection of papers, we rely on peer-review. Peer-review is the process of experts in the field reading, understanding, and objectively commenting on submitted papers. Through peer-review, scholars give back to the academic and scientific community by helping the chair(s) make decisions regarding manuscripts.

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Reviewers should promptly notify the chair(s) if they are unable or unqualified to carry out their reviewing duties. Reviewers should do their best to provide the reviews to the chair(s) as promptly as possible, and within the designated time-frame.

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Invited reviewers should immediately inform the chair(s) in case of a conflict of interest based on competitive, collaborative, personal, family, and other relationships with the authors or people involved in the work.

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ETHICS & MALPRACTICE

Authors

Reporting Standards

The paper being submitted for the proceedings should be based on clear objective, discussion, and references. The findings, data, and the arguments being used in the paper should be accurate. It is author's responsibility to guarantee the authenticity of the data in the paper.

Authorship

Only persons who have significantly contributed to the work and the manuscript can be named authors on a paper. These contributions include the idea/concept, design, experiments, evaluation, analysis, drafting or revision of the manuscript, and others. Authors must all have agreed to be named as such and for the manuscript to be submitted. Anyone who has contributed based on the above, but the level of contribution is not significant, may appear in the acknowledgement section of the manuscript.

Acknowledgement of Source

Acknowledgement to other's work being used in the paper must be given at all times. Authors of the paper should give comprehensive credit where it is necessary, by citing the work, they use for supporting their own research.

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Authors are encouraged to share their data, software, or other sharable material online, provided copyright and ownership laws surrounding that particular project

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permit. Authors may also be asked to share such material with the chair(s), and/or reviewers, and must be willing to do so if asked.

Dual Submissions

Submitting a manuscript to more than one venue (conference, journal, etc) simultaneously is not allowed. Presenting previously published work to be considered as a new submission, without a significant new interpretation or analysis, is prohibited.

Conflicts of Interest

Authors must notify the chair(s) at the time of submission, if any factor outside the scope of the research has influenced any step of the work and manuscript writing. Examples of such factors include but are not limited to funding, grants, advisory and consultancy, stock ownership, current or past employment, and memberships, among others. All funding sources should be disclosed in the manuscript.

Animal and Human Subjects

Works involving human and/or animal subjects must ensure that the work has abided by institutional guidelines, and pre-approved by required bodies. Moreover, consent must be acquired from participants, and privacy of subjects must be ensured. All of the above must be specified with clear statements in the manuscript.

Hazardous Material

It should clearly be identified in the manuscripts if the works have involved hazardous chemicals and material, or devices that can be harmful.

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If an author identifies a major error in a published paper, he/she must immediately inform the publisher. Regardless of whether a significant error is reported by the authors of the work or other readers, authors are obligated to take the necessary steps to correct the issue. It is decided on a case-by-case basis whether an erratum will be submitted to notify future readers of the error and correction, or whether the paper will be retracted. Unethical/plagiarism issues mostly result in a retraction, while unintended mistakes will mostly result in the erratum.

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ETHICS & MALPRACTICE

Publisher

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  The publisher takes the necessary steps to prevent mistakes, academic and scientific misconduct, and unethical behavior, both intended and unintended. When mistakes are reported, the publisher works with chair(s) and authors to publish an erratum clarifying the issue. In cases where the mistakes are severe and significant, the paper might be retracted. If unethical behavior, plagiarism, academic and scientific misconduct, or other such activities are proven to have taken place by an author or authors, the publisher will retract the paper.

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- ***Ownership and Management:***
  This conference-proceedings is managed and operated by the International ASET (International Academy of Science, Engineering, and Technology) and Avestia Publishing (the publishing arm of ASET).

- ***Schedule:***
  This conference proceeding accompanies the conference, meaning a new proceedings will be published every year for the corresponding annual conference of this series.

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CONTACT US

The 4th World Congress on Recent Advances in Nanotechnology (RAN'19) consist of 2 conferences. You can contact each conference using the information below.

IC NNFC'19	**4th International Conference on Nanomaterials, Nanodevices, Fabrication and Characterization** **Email: info@icnnfc.com** **Website: https://2019.icnnfc.com**
NDDTE '19	**4th International Conference on Nanomedicine, Drug Delivery, and Tissue Engineering** **Email: info@nddte.com** **Website: https://2019.nddte.com**

For inquiries and to obtain further information on the congress, please visit the website

You can also email info@rancongress.com or call us

at: +1-613-834-9999

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