



VIT[®]

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)



**Centre for
Nanotechnology
Research**

World Nano Congress on Advanced Science & Technology

WNCST 2021

Organized by

Centre for Nanotechnology
Research (CNR)

Vellore Institute of Technology (VIT)
Vellore, India

08-13

March 2021



Special Lecture by



Dr. Takaaki Kajita
Nobel Laureate in
Physics (2015)
University of Tokyo, Japan

About VIT

Vellore Institute of Technology (VIT) was established in 1984 as Vellore Engineering College by the Honourable Chancellor **Dr. G. Viswanathan** with the aim of providing quality higher education on par with international standards. VIT is recently recognized as **Institution of Eminence (IOE)** by Government of India. Having fully committed to its vision - "Transforming life through excellence in education and research", VIT is focussing on quality teaching-learning process, research and innovation, which would make the institute distinct from others. Currently, VIT has 4 campuses – in **Vellore, Chennai, Amaravati (AP) and Bhopal (MP)**. The National Institutional Ranking Framework (NIRF) of the MHRD, Government of India, has identified VIT as the best Private Engineering Institution in India for 5 years in a row (NIRF-2016 2017, 2018, 2019 and 2020 rankings) and achieved 15th position among the engineering institutions in India by NIRF 2020. VIT is Ranked No.1 Private Institution for Innovation (ARIIA 2019 award) by Govt. of India. VIT is the first in India to get 4-star ratings from QS, the world universities ranking organization. In addition to this, the consortium of industries, FICCI conferred VIT with the "Excellence in Faculty award". VIT has consistently received "A" grade in the past three cycles of NAAC accreditation. Besides, VIT also has received the coveted ABET accreditation, which is widely recognized throughout the world. VIT has already been ranked by the major International rankings such as QS World University Ranking (Ranked in the top 801-1000 in 2020) QS Asia University Ranking (Ranked 215 in 2021) QS India University Ranking 28 in 2020); THE World University Ranking (THE World University rank 801-1000, THE Asia University Rank 201-250, THE India University rank 28 in the year 2020); THE Emerging Economies University Ranking; US News Ranking, and Shanghai ranking (Academic Ranking of World Universities (ARWU) 901 – 1000 for the year 2020).

About CNR

The **Centre for Nanotechnology Research (CNR)** at VIT, Vellore was established in June 2008 to support Academic and Research Programs in Nanotechnology. The centre is operating at the forefront of nanotechnology with a strong focus on "Flexible Electronic devices for Energy, Sensors and Health care" to provide solutions to various global issues. The centre has a unique operating model combining expertise from different branches of science and engineering to work on a common theme of Nanotechnology enabled flexible devices. The centre has a strong relationship with the leading nanotechnology experts both from the national and international level. The successful evolution of nanotechnology has centered on unique cohesiveness to provide a nourishing atmosphere for students, researchers and the society. The major focus of the centre is on flexible devices towards research areas of national priorities such as energy, sensors and healthcare. The centre is equipped with the state of the art research equipment in nanomaterials synthesis, characterization and simulation tools. CNR ensures excellence in basic and applied research, provides a strong research culture and maintains gender equality. CNR also nurtures the highly cross-disciplinary team members exploiting nanotechnology on the convergence of various scientific domains leading to a significant scientific breakthrough and addressing key societal challenges.

About WNCST

"**World Nano Congress on Advanced Science and Technology**" (**WNCST-2021**) aims to bring together Indian and International communities (students, scientists, engineers and stakeholders from academia, government laboratories, industry and other organisations) to showcase their cutting-edge and significant contributions in the field of Nanoscience and Nanotechnology. This virtual event will bridge researchers across the globe to a single platform to exchange scientific ideas and knowledge. The congress covers broad theme on this area to accommodate wide range of interests and to facilitate interdisciplinary collaboration/interaction in both academia and industry. The congress will also provide an ideal environment to develop new collaborations and opportunities to meet the experts working on various areas of this field.

The themes of the congress are:

- Flexible Electronic Devices
- Synthesis and Fabrication of Advanced Nanostructures
- Advanced Nanomaterials characterization
- Nanomaterials and devices for
 - ~ Energy harvesting, Storage and Conversion
 - ~ Environment (Water purification, Adsorbents, CO₂ remediation)
 - ~ Sensors
 - ~ Food, Agriculture and Health care
 - ~ Automobile
 - ~ Hydrogen Energy
- Biomedical systems and devices
- Nanophotonics and Plasmonics
- Nanoelectronics: Fabrication/modelling and simulation
- Quantum Technology - Computing, Simulation, Communication and Sensing
- Molecular Nanoscience, Catalysis and Applications
- Nanocoatings
- Nanotechnology to combat COVID-19



Speakers



Dr. Abdul Khaliq Rasheed

Xiamen University, Malaysia



Dr. Abinash Tripathy

ETH Zurich, Switzerland



Dr. Adam Lee

RMIT University, Australia



Dr. Adnan Mehonic

University College London (UCL), UK



Dr. Andrew Wee

NUS, Singapore



Dr. Anirudha V. Sumant

Argonne National Laboratory, USA



Dr. Aravind Vijayraghavan

University of Manchester, UK



Dr. Arben Merkoçi
Institut Català de Nanociència i Nanotecnologia, Spain



Dr. Aritra Ghosh

University of Exeter, UK



Dr. Balakumar S

University of Madras, Chennai, India



Dr. Chacko Jacob

IIT Kharagpur, India



Dr. Cha Judy

Yale University, USA



Dr. Chennupati Jagadish AC

Australian National University, Australia



Dr. Carla Meledandri

University of Otago, New Zealand



Dr. Chuyang TANG

The University of Hong Kong, Hong Kong



Dr. David Jenkins

Plymouth University UK



Dr. Debasish Sarkar

NIT Rourkela, India



Dr. Deep Jariwala

University of Pennsylvania, USA



Dipankar Bandyopadhyay

IIT Guwahati, India



Dr. Gehan Amaratunga

University of Cambridge, UK



Dr. George Malliaras

University of Cambridge, UK



Dr. Gilberto Maia

UFMS, Brazil



Harry E. Ruda

University of Toronto, Canada



Dr. Hiroshi Watanabe

National Chiao Tung University, Taiwan



Dr. Ilia Valov

Forschungszentrum Jülich, Germany



Dr. Jayan Thomas

University of Central Florida, USA



Dr. Jayavel R

Anna University, Chennai, India



Dr. Jeon Woong Kang

Massachusetts Institute of Technology, USA



Dr. Jiaxing Huang

Northwestern University, USA



Dr. John V. Kennedy

GNS Science, New Zealand



Dr. Kamalakannan Kailasam

INST Mohali, India



Dr. Kannan A. M

Arizona State University, USA



Dr. Kourosch Kalantar-Zadeh

University of New South Wales (UNSW), Australia



Dr. Lorenzo Pavesi

University of Trento, Italy



Dr. Madasamy Thangamuthu

University College London (UCL), UK

Speakers



**Dr. Madhu
Bhaskaran**

RMIT University,
Australia



**Marc-Olivier
Coppens**

University College
London (UCL), UK



**Dr. Mark M.
Banaszak Holl**

Monash University,
Australia



**Dr. Marlia Mohd
Hanafiah**

University of
Kebangsaan,
Malaysia



**Dr. Maxim
Shcherbakov**

Cornell University,
USA



**Dr. Mohammad
Khaja
Nazeeruddin**

EPFL,
Switzerland



**Dr. Mohamad
Khalid**

Sunway University,
Malaysia



**Dr. Murali
Banovath**

University of
Hyderabad, India



**Dr. Nanasaheb
Thorat**

Oxford University,
UK



Dr. Narayanan T.N

TIFR Hyderabad,
India



**Dr. Narendra
Kurra**

IISER,
Trivandrum,
India



Dr. Navid Bizmark

Princeton University,
USA



Dr. Neil Robertson

University of
Edinburgh, UK



Dr. Paul Weiss

University of
California,
Los Angeles,
USA



Dr. Peng Cao

The University of
Auckland,
New Zealand



Dr. Poonam Singh

Arizona State
University, USA



**Dr. Prashant
Sonar**

Queensland
University of
Technology,
Australia



**Dr. Putla
Subramaniam**

CSIR-National
Chemical Laboratory
Pune, India



Dr. Quyet Van Le

Duy Tan University,
Vietnam



**Dr. Raj Kumar
Dutta**

IIT Roorkee,
India



Dr. Rajakannu P

KAIST,
South Korea



**Dr. Ramachandra
Rao**

IIT Chennai,
India



**Dr. Ravindra
Pandey**

Michigan
Technological
University, USA



Dr. Ravi Shankar

Imperial College
London,
UK



**Dr. (Emeritus)
Reshef Tenne**

Weizmann Institute,
Israel



**Dr. Roger C.
Hiorns**

IPREM-CNRS/UPPA,
France



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ETH Zurich,
Switzerland



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University, UK



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Talapatra**

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University, USA



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India



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India



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Ramakrishna**

NUS, Singapore



**Dr. Shirley
Meng Y**




















University of
California,
San Diego, USA


















**Dr. Sudhagar
Pitchaimuthu**

Swansea University,
UK

Speakers

 <p>Dr. Sunil Bhand BITS Goa, India</p>	 <p>Dr. Suresh C. Pillai Institute of Technology, Sligo, Ireland</p>	 <p>Dr. Svetlana Boriskina Massachusetts Institute of Technology, USA</p>	 <p>Dr. Swaminathan Viswanathan Nanyang Technological University, Singapore</p>	 <p>Dr. Takao Mori International Center for Materials Nanoarchitectonics (WPI-MANA) University of Tsukuba, Japan</p>
 <p>Dr. Talita Mazon Center of Technology of Information Renato Archer, Brazil</p>	 <p>Dr. Unyong Jeong POSTECH, South Korea</p>	 <p>Dr. Venkata Krishnan IIT Mandi, India</p>	 <p>Dr. Vincenzo Pecunia Soochow University, China</p>	 <p>Dr. Vinodkumar Etacheri IMDEA- Materials Institute, Spain</p>
 <p>Dr. Vivek Polshettiwar TIFR Mumbai, India</p>	 <p>Dr. Wei Gao California Institute of Technology, USA</p>	 <p>Dr. Weiping Wu CAS Shanghai, China</p>	 <p>Dr. Yu Chai City University of Hong Kong</p>	 <p>Dr. Yuan Chen The University of Sydney, Australia</p>
 <p>Dr. Yuelong Li Nankai University, China</p>	 <p>Dr. Yury Gogotsi Drexel University, USA</p>	 <p>Dr Yun Liu The Australian National University, Australia</p>	 <p>Dr. Zhenan Bao Stanford University, USA</p>	

CREDENTIALS OF VIT - ACCREDITATIONS / RANKINGS / RATINGS

 <p>Govt. of India has recognized VIT, Vellore as an Institution of Eminence (IoE)</p>	 <p>ARIIA ATAL RANKING OF INSTITUTIONS ON INNOVATION ACHIEVEMENTS</p>	<p>No.1 Position - 2019 (Private Institutions)</p>
 <p>NIRF (National Institutional Ranking Frame work) No. 15 in Engineering Institution - 2020 No. 16 in University Category - 2020 No. 55 in Management Institution - 2020 No 28 in Overall - 2020</p>	 <p>QS RATING 2016 4 STAR overall Rating in 2016 Got 5 STAR Rating for 5 Sub Categories (Teaching, Employability, Facilities, Innovation and Inclusiveness) First University in India to get QS 4 Star Rating</p>	
 <p>NAAC (National Assessment and Accreditation Council) Accredited in 2015 - A grade Accredited in 2009 - A grade Completed 3 Cycles of Accreditation</p>	 <p>THE WORLD and ASIA UNIVERSITY RANKINGS Ranked in the Top 801-1000 in 2020 (World Ranking) Ranked in the Top 201-250 in 2018 (Asia Ranking) Ranked 28 in 2020 (India Ranking)</p>	
 <p>ABET (Accreditation Board for Engineering and Technology), USA 3 Times Accredited 10 B.Tech Programs – Vellore Campus 4 B.Tech Programs – Chennai Campus</p>	 <p>QS UNIVERSITY RANKING Ranked in the Top 801 - 1000 (World) Ranked 215 (Asia) in 2021 Ranked 28 (India)</p>	
 <p>IET (The Institution of Engineering and Technology), UK Accredited in 2005</p>	 <p>India Research Excellence – Citation Awards 2019</p>	
 <p>NBA (National Board of Accreditation) Accredited in 2009 Accredited in 1998</p>	 <p>QS I-GAUGE Got DIAMOND University Rating in 2018</p>	
 <p>FICCI (Federation of Indian Chambers of Commerce & Industry) "Excellence in Enabling Research Environment" - 2019 "Excellence in Internationalization of Edu." - 2018 "Excellence in Faculty" - 2017 "University of the Year" - 2016</p>	 <p>ACBSP (The Accreditation Council for Business Schools and Programs), USA VITBS is fully Accredited for 10 years from 2017</p>	
 <p>UGC graded autonomy in 2018 Government endorsed recognition for VIT</p>	 <p>ACCA (Association of Chartered Certified Accountants, UK) BBA Programme is Accredited from 2017</p>	

Call for Papers

Interested participants are requested to submit an extended abstract (2 pages) including manuscript title, author(s), affiliation(s), and contact details with a clear indication of the research work, methodology, major results (one figure), and conclusion. The selected abstracts will be allotted for oral/poster presentations.

Paper Presentation details

- Abstracts must be submitted for oral/poster presentation
- Abstract submission ends on February 15th, 2021
- There will be a selection committee to review the abstracts based on its scientific merit for poster presentations
- The acceptance of abstract for oral/poster presentations will be intimated to the delegate on/ before February 22nd, 2021
- Submission of posters on/before March 1st 2021.

e-Certificate

Only the presenting author will get a poster presentation certificate. A participation certificate will be given to registered co-authors who attend a minimum of 20 sessions for six days.

WNCST 2021 Publications

(will be updated soon)

All communications should be sent to E-Mail: wncst2021@vit.ac.in

IMPORTANT DATES

Abstract Submission –
Extended Abstract (2
pages, 1000 words)

15.02.2021

Acceptance for abstract
Intimation

22.02.2021

Last Date for
Registration

01.03.2021

Congress
Date

08 - 13
March, 2021

Highlights of WNCST 2021

- ◆ Special Lecture by Nobel Laureate
- ◆ Lectures from renowned speakers
- ◆ Speakers from 22 countries
- ◆ ACS Journals Paper Presentation Awards
(ACS Nano, ACS Applied Materials and Interfaces, ACS Omega, ACS Energy Letters, ACS Nano letters, ACS Applied Electronic Materials, ACS Applied Nanomaterials, ACS Applied Energy Materials)
- ◆ CNR-VIT Young Researcher Awards
- ◆ CNR-VIT Women Researcher Awards
- ◆ Publications in Scopus Indexed Journals
- ◆ Free Registration

Presentation Awards



ACS
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AMERICAN CHEMICAL SOCIETY

ACS Best Presentation awards

Ten Best presentations within the scope of the following ACS journals will be selected and awarded an ACS journal certificate and one year complimentary membership.

ACS Nano

ACS Omega

ACS Applied Materials and Interfaces

ACS Energy Letters

Nano letters

ACS Applied Electronic Materials

ACS Applied Nanomaterials

ACS Applied Energy Materials

VIT-CNR Young Researcher Awards

Five best presentations within the scope of the congress will be selected and awarded VIT-CNR Young Researcher award

VIT-CNR Women Researcher Awards

Five best presentations within the scope of the congress from Women Researchers will be selected and awarded VIT-CNR Women Researcher award

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Chancellor

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