



International Virtual Conference on Advances in Functional Materials (AFM 2020)

27th - 28th August, 2020

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AFM 2020 Pre-Conference International Workshop on Ferroelectric & Piezoelectric Nanomaterials and Devices for Young Researchers

26th August, 2020

**Department of Physics, School of Applied Sciences
Kalinga Institute of Industrial Technology (KIIT) Deemed to be
University Bhubaneswar-751024, Odisha, India**

AFM 2020 SCHEDULE

Slot	Time (IST) GMT+5.30	DAY-1 (Pre - Conference Workshop) 26-8-2020 (Tuesday) Speakers, Affiliation and Titles
	9.00 AM-9.30 AM	Inauguration Ceremony
		Session-1
		Fundamentals of piezoelectricity and ferroelectricity Chairman: Dr. L. Biswal, KIIT-DU
W1	9.30 AM-10.10 AM	Dr. Amritendu Roy SMMME, IIT Bhubaneswar, India Fundamentals of piezoelectricity and ferroelectricity
W2	10.20 AM-11.00 AM	Dr. Balaram Sahoo Materials Research Centre, Indian Institute of Science, Bangalore, India Science and Technology of Non-Linear Absorption
		Session 2
		Chairman: Dr. S. K. Sahoo, KIIT-DU
W3	11.10 AM-11.50 AM	Dr. Amiya Priyam School of Physical and Chemical Sciences, Central University of South Bihar, India Understanding the Optical Properties of Luminescent Semiconductor Nanocrystals
W4	12.00 PM-12.40 PM	Mr. Sovan Kumar Patra Ferro Alloys Minerals Research Group, Tata Steel R&D, Jamshedpur, India Quantum Dots and their diverse applications

12.50 PM- 1.50 PM

LUNCH

Session-3

Chairman: Dr. Maya Devi, KIIT-DU

W5 2.00 PM- 2.40 PM

Dr.Alluri Nagamalleswara Rao

Nanomaterials and Systems Lab, Dept. of Mechatronics Engineering, Jeju National University, South Korea
Advances in Piezoelectric Nanomaterials: Growth, Device Modelling, and Applications

W6 2.50PM- 3.30PM

Dr. Ashok Kumar

Academy of Scientific and Innovative Research (AcSIR), CSIR- National Physical Laboratory Campus, Delhi, India
COVID19-Human physiological tracing dielectric sensors

Session-4

4.00PM-6.30PM

YOUNG SCIENTIST FORUM

Chairman: Dr. Balram Sahoo, IISc Bangalore

YS1

Ramachandra Naik

Department of Physics, New Horizon College of Engineering, Bangalore-560103, India
Low temperature synthesis and photoluminescence properties of red emitting Mg₂SiO₄:Eu³⁺ nanophosphor for near UV light emitting diodes

YS2

A. Manivannan

Department of Mechanical Engineering, M.Kumarasamy College of Engineering, Karur, Tamil Nadu, India
Exemplary Encapsulate Feeding in Stir Casting for Quality Composites

YS3

Anjan Kumar Jena

Nanomagnetism and Microscopy Laboratory, Department of Physics, Indian Institute of Technology Hyderabad, Telangana, India
Effects of Magnetic field on resistive switching in multiferroic based Ag/BiFeO₃/FTO RRAM device

YS4

A. Puhon

School of Applied Sciences (Physics), KIIT Deemed to be University, Bhubaneswar, India
Facile single phase synthesis of Sr, Co co-doped BiFeO₃ nanoparticles for boosting photocatalytic and magnetic properties

YS5

Atal Bihari Swain,

Department of Physics, Indian Institute of Technology Madras, Chennai, India
Engineering the resonance modes for enhanced magnetoelectric coupling in bilayer laminate composites for energy harvesting application

YS6

Bhavesh Kumar Dadhich

Department of Physics, School of Applied Sciences, Kalinga Institute of Industrial Technology, Deemed to be University, Bhubaneswar, India

Hollow silver nanostructures: The role of capping agents in tailoring the shape, structure and plasmonic properties

YS7

Krishnarjun Banerjee

Department of Physics, Indian Institute of Technology Hyderabad, Hyderabad, India

Investigation on the discharge energy storage density of the Rb substituted $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3$ relaxor ferroelectric and its suitability for the orthopedic application

YS8

Lagen Kumar Pradhan

Department of Physics, Indian Institute of Technology Patna

Nonstoichiometric charge defect induced relaxor antiferroelectric ordering in La modified $\text{Bi}_{0.5}(\text{Na}_{0.80}\text{K}_{0.20})_{0.5}\text{TiO}_3$ relaxor ferroelectric

YS9

Prabhasini Gupta

Department of Physics, Siksha 'O' Anusandhan University, Bhubaneswar-751030, Odisha, India

Structural and Electrical properties of Bi_3TiVO_9 Ferroelectric Ceramic

YS10

Sagarika Nayak

National Institute of Science Education and Research (NISER), Bhubaneswar, India

Static and dynamic magnetic properties of soft/hard ferromagnetic bilayers

YS11

Sujoy Kumar Ghosh

Ulsan National Institute of Science and Technology (UNIST), South Korea

All-fiber self-powered wearable nano-tactile ferroelectric sensor

YS12

Sunny Nandi

Department of Physics
Tezpur University, Assam, India

A low cost and extremely safe rechargeable aqueous aluminum-metal battery

YS13

Suresh Bandi

Department of Metallurgical & Materials Engineering,
Visvesvaraya National Institute of Technology, Nagpur, India

Graphene from discharged dry cell battery electrodes

YS14

Sushmita Dey

CSIR-National Metallurgical Laboratory, Jamshedpur, India

High Temperature Magnetocaloric Effect in Devitrified Fe/Co-based Glassy Monolayer and Bilayer Ribbons

- YS15** **Upendra Kumar**
Department of Physics, Banasthali Vidyapith, Banasthali,
Rajasthan, India
Sr₂SnO₄ Ruddlesden Popper Oxide: A multifunctional material
- YS16** **U.K. Panigrahi**
Department of Physics, North Orissa University, Baripada,
India
Zn Doping Induced Enhancement of Multifunctional Properties in NiO Nanoparticles
- YS17** **Venkateswaran Vivekananthan,**
Nanomaterials & System Lab, Department of Mechatronics
Engineering, Jeju National University, South Korea.
Biocompatible collagen-nanofibrils: An approach for sustainable energy harvesting and battery-free humidity sensor applications
- YS18** **A. Hossain**
Department of Physical and Inorganic Chemistry, Institute of
Natural Sciences and Mathematics, Ural Federal University,
Yekaterinburg, Russia
**Structure and properties of Nd_{1-x}A_xMn_{0.5}Fe_{0.5}O_{3-d}
(A=Ca, Sr, Ba; x=0, 0.25)**

DAY-2

Slot **Time (IST)** **27-8-2020 (Tuesday)**
GMT+5.30 **Speakers , Affiliation and Titles**

9.00AM -9.30AM

Inauguration

Session 1

Chairperson: Dr. P. Pattojoshi
Dean, School of Applied Sciences, KIIT DU

PL1 **9.30 AM-10.20 AM** **Prof. Sabu Thomas**
Vice Chancellor, Mahatma Gandhi University, Kottayam, Kerala,
Interfacial Modification in Nanocomposites to Tailor Functionalities

INV1 **10.30 AM-11.10 AM** **Dr. Prasana Kumar Sahoo**
Material Science Centre, Indian Institute of Technology
Kharagpur, India
Emerging Two-Dimensional Lateral Heterostructures for Optoelectronic Devices

Session 2

Chairman: Sri R. L. Sharma, Chairman & Managing Director SPEL, Pune

PL2	11.20 AM-12.10 AM	Dr.Patric Joseph Glynn Bharat Energy Storage Technology, Queensland, Australia High Density Thermal Energy Storage
INV-2	12.20 PM-1.00 PM	Balaram Sahoo Materials Research Centre, Indian Institute of Science, Bangalore, India Non-linear absorption behavior of carbonaceous nanomaterials for laser safety application
	1PM- 3.30 PM	Lunch
		Session 3 Chairman: Dr. Bidhubhusan Sahu, KIIT-DU
INV-3	3.30-4.10 PM	Dr.Amritendu Roy SMMME, IIT Bhubaneswar, India Designing and development of novel room temperature multiferroics based on transition metal oxides
INV-4	4.20 PM- 4.50 PM	Dr. Dipti R. Sahu Department of Natural and Applied Sciences Namibia University of Science and Technology, Namibia Room temperature multiferroic properties of rare earth doped Ho, Gd and Ce - BiFeO₃ ceramics-Comparative Study
PL3	5.00 PM- 5.50 PM	Dr. Emre Erdem Sabanci University, Faculty of Engineering and Science, Materials Science and Nano Engineering, Orhanli, Istanbul, Turkey Point Defects in Ceramics and Semiconductors and Their Roles in Supercapacitor Devices
		Session 4 Chairman: Dr. Alok Pattanaik , KIIT-DU
PL4	6.00 PM -6.50PM	Prof. Ram S. Katiyar Speclab, Department of Physics, University of Puerto Rico, San Juan, USA Progress in Designing Novel Single Phase Room Temperature Multiferroics
Slot	Time (IST) GMT+5.30	DAY-3 28-8-2020 (Wednesday) Speakers (local time), Affiliation and Titles
		Session -5 Chairman: Dr.Amiya Priyam Central University of South Bihar, Gaya
PL5	9.30 AM-10.20 AM	Dr. Hari Srikanth Distinguished University Professor & Fellow -American Physical Society Department of Physics, University of South Florida, USA Functional magnetic nanoparticles for biomedical applications
INV-5	10.30 AM-11.10 AM	Dr. Ashok Kumar CSIR-National Physical Laboratory, Academy of Scientific and Innovative Research (AcSIR), Delhi, India Basic understanding and design and development of low cost Blood Pressure Measurement Devices

Session -6

Chairperson: Dr. Swetapadma Praharaj, KIIT-DU

PL6

Sri R. L. Shrama

SPEL Pvt. Ltd., Pune, India

Energy Storage Present & Future Prospects

INV-6

Dr. Amiya Priyam

Dept. of Chemistry, School of Physical and Chemical
Sciences, Central University of South Bihar, India

**Soft Chemistry Routes for tunable plasmonic nanomaterials and
some interesting applications thereof**

1.00 PM- 1.50 PM

LUNCH

Session -7

Chairperson: Dr. R. N. Mukherjee KIIT DU

PL7 2.00 PM- 2.50 PM

Guylaine Poulin-Vittrant

GREMAN UMR 7347, CNRS, Université de Tours, INSA-CVL, France

**Low-temperature synthesized ZnO nanostructures and their
integration into nanosystems**

INV-7 3.00 PM- 3.30 PM

Dr. Somdutta Mukherjee

Materials Chemistry Department, CSIR-IMMT Bhubaneswar, India
Gallium ferrite nanostructures for ferroelectric memory applications

INV-8 3.40PM-4.10 PM

Dr. N.M. Rao

Nanomaterials and Systems Lab, Dept. of Mechatronics Engineering, Jeju
National University, South Korea.

**Flexible, Multifunctional Piezoelectric Materials for Nanogenerators
and Self-Powered Sensor**

Session-8

Chairperson: Dr. Kajal Parashar

PL9 4.20.PM - 5.10 PM

Dr.Xavier Moya

University of Cambridge UK

Advanced functional materials for sustainable energy applications

5.20 PM-6.00 PM

Valedictory