

TECHNICAL PROGRAMME OF

International Conference and Workshop in Advanced Materials and Manufacturing for Biomedical and Composite Applications

AMBC 2026

May 15-17, 2026

Organized by

International and Inter University Centre for
Nanoscience and Nanotechnology (IIUCNN)

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School of Nanoscience and Nanotechnology

&

School of Energy Materials (SEM)

Mahatma Gandhi University,

Kottayam, Kerala, India

&

The University of Alabama at Birmingham

Supported By:



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सत्यमेव जयते



Scheme for Promotion of Academic and Research Collaboration



		1st Day of the Conference 15th May 2026	
	08.00-09.00	REGISTRATION	
	09.00-09.30	INAUGURATION AND INAUGURAL ADDRESS Hall 1	
	09.00-09.05	Welcome Speech	Dr. Sreekala M. S. Associate Professor School of Chemical Sciences, (Joint Director, IIUCNN & School of Nanoscience and Nanotechnology) Mahatma Gandhi University, Kottayam, Kerala, India
	09.05-09.10	Introductory Remarks	Prof. Sabu Thomas Director, IIUCNN, Mahatma Gandhi University, Kottayam, Kerala, India
	09.10-09.15	Address of the Chair	Prof. C. T. Aravindakumar Vice-Chancellor, Mahatma Gandhi University, Kottayam, Kerala, India
	09.15-09.20	Guest of Honour	Prof Vinoy Thomas Department of Mechanical and Materials Engineering, The University of Alabama at Birmingham, USA
	09.20-09.25	Guest of Honour	Prof N. Sanjeeva Murthy The State University of New Jersey, Piscataway, NJ, USA.
	09.25-09.30	Vote of Thanks	Krishna S Mahatma Gandhi University, Kottayam, Kerala, India
		Plenary Lectures Chairperson: Pugalanthipandian Sankaralingam (Bone Substitutes Pvt. Ltd, Madurai, Tamil Nadu, India)	
PL 1	09.30-10.00	Vinoy Thomas The University of Alabama at Birmingham, USA Topic: Plasma Engineering for Better Biointerfaces	
PL 2	10.00-10.30	N. Sanjeeva Murthy The State University of New Jersey, Piscataway, NJ, USA. Topic: Fabrication of Hybrid and Hierarchical Scaffolds for Tissue Engineering by 3D Printing, Airbrushing and Electrospinning	
	10.30-10.45	GROUP PHOTO SESSION	
	10.45-11.00	Tea Break	
		Keynote Lectures Chairperson: N. Sanjeeva Murthy (The State University of New Jersey, Piscataway, NJ, USA)	
KL 1	11.00-11.30	A. Manuel Stephan CSIR-Central Electrochemical Research Institute (CSIR-CECRI) Karaikudi, India Topic: High Energy Implantable Batteries for Biomedical Applications	

		Invited Lectures Biomedical Applications Chairperson: Vinoy Thomas (The University of Alabama at Birmingham)
IL 1	11.30-11.55	Vinod Verma Stem Cell Research Center, Department of Hematology, SGPGIMS, Lucknow (UP) , India Topic: Engineering an MXene Composite Nanofiber-Based 3D Culture Platform for Efficient Differentiation of MSCs into Functional Pancreatic β-Cells
IL 2	11.55-12.20	Pugalanthipandian Sankaralingam Bone Substitutes Pvt. Ltd, Madurai, Tamil Nadu, India Topic: A SYNTHETIC BONE-DREAM COMES TRUE
		Chairperson: Nebu George Thomas (Pushpagiri College Of Dental Sciences, Thiruvalla, Kerala, India)
IL 3	12.20-12.45	Amjad Mumtaz Khan Aligarh Muslim University, Aligarh, U.P., India Topic: Polyaniline-Modified 2D Nanomaterials for Enhanced Iodine Capture: A combined Experimental and Theoretical study.
	12.45-14.00	Lunch Break
	14.00-16.00	Parallel Laboratory Demonstration Session <i>Live Demonstration on Advanced Scaffold Fabrication and Characterization Techniques</i>
		Plenary Lectures Chairperson: Roy Koomullil (The University of Alabama at Birmingham, USA)
PL 3	14.00-14.30	Thomas J. Webster Brown University, USA Topic: 45,000 Implants in Humans and No Failure: The Impact of Nanomedicine
PL 4	14.30-15.00	Selvum Brian Pillay The University of Alabama at Birmingham, USA Topic: Recycling and Product Development of Polymer Matrix Composites
		Invited Lectures Chairperson: C. T. Vijayakumar (Department of Polymer Technology, KCET, Virudhunagar)
IL 4	15.00-15.25	Masoumeh Khomehchi, Hamedan University of Technology, Iran Topic: Predictive Modeling and Probabilistic Design of Ion-Doped Bioactive Glasses for Bone and Dental Regeneration
IL 5	15.25-15.50	Santosh S Mathapati BRIC-Translational Health Science and Technology Institute, Faridabad Topic: Developing Biomimetic Tissue-based Implants: From Bench to Bedside
	15.50-16.05	Tea Break
		Plenary Lectures Chairperson: A. Manuel Stephan

		CSIR-Central Electrochemical Research Institute (CSIR-CECRI), Karaikudi, India)
PL 5	16.05-16.35	Baiju R M Govt Dental College, Kottayam, Kerala Topic: Three-Dimensional Scaffolds: A New Frontier in Periodontal Regenerative Therapy
PL 6	16.35-17.05	Nebu George Thomas Pushpagiri College Of Dental Sciences, Thiruvalla, Kerala Topic: From Bench to Animal Model: Preclinical Validation of Scaffolds for Soft Tissue Regeneration
		Chairperson: Baiju R M (Govt Dental College, Kottayam, Kerala)
PL 7	17.05-17.35	Goutam Chandra Inter-University Centre for Biomedical Research and Super Speciality Hospital (IUCBR&SSH), Kottayam Kerala Topic: Advanced smart biomaterials and 4D bioprinting strategies for brain injury repair and neural regeneration
PL 8	17.35-18.05	Milan Stehlik University of Valparaiso, Chile Topic:
	18.05-19.05	Horizon Europe: The European Union's ambitious research and innovation programme running until 2027. With Rolling 'Calls For Proposals' Participants are encouraged to present 1–2 slides on collaborative research ideas.
		Participants are requested to display their posters on the designated poster boards before the poster session.
	17.00-18.00	Poster session
P 1	(10 min)	Aiswarya R Prasad, S.H.Bhuvanashri, Shilpa Mariam Mathew School of Advanced Science, Vellore Institute of Technology, Vellore, India Topic: Synthesis and Characterization of Self-Assembled Copper Clusters
P 2	(10 min)	Mohd Saqib, Aligarh Muslim University, Aligarh U.P. India. Topic: Facile Synthesis of a PANI@CeO ₂ /GO Ternary Nanocomposite for Efficient Removal of Hexavalent Chromium [Cr(VI)] from Aqueous Media
P 3	(10 min)	Areeba Khayal Aligarh Muslim University, Aligarh, U.P. India Topic: Synergistic Integration of Porosity, Conductivity, and Enzymatic Functionality in Hydrogels for Efficient Glucose Sensing
	19.15-20.15	Dinner

		2nd Day of the Conference 16th May 2026
		Hall 1
		Plenary Lectures Chairperson: Nebu George Thomas (Pushpagiri College Of Dental Sciences, Thiruvalla, Kerala)
PL 9	09.00-9.30	Jonathan I Dawson University of Southampton, UK. Topic: Self-assembling nanoclay gels for the delivery of regenerative microenvironments
PL 10	09.30-10.00	Deepthy Menon Amrita School of Nanosciences & Molecular Medicine, Amrita Vishwa Vidyapeetham, Kochi, Kerala, India Topic: Smart Nanofiber Implants for Precision Oncology
PL 11	10.00-10.30	Roy Koomullil The University of Alabama at Birmingham, USA Topic: Experimental Estimation of Permeability and Computational Modeling of VARTM Process for Composite Material with Infusion Media
	10.30-10.40	Tea Break
		Chairperson: Roy Koomullil (The University of Alabama at Birmingham, USA)
PL 12	10.40-11.10	N Radhakrishnan NRICMI, MG University Topic:
PL 13	11.10-11.40	Binulal N. Sathy Amrita School of Nanosciences & Molecular Medicine, Amrita Vishwa Vidyapeetham, Kochi, Kerala, India Topic: Beyond Biocompatibility: Understanding Cellular Sensitivity in Advancing Biomedical Innovation
		Chairperson: N Radhakrishnan (NRICMI, MG University, Kottayam, Kerala, India)
PL 14	11.40-12.10	Nandakumar Kalarikkal IIUCNN, Mahatma Gandhi University, Kottayam Topic: Novel Polymer Nanocomposite Scaffolds for Wound Healing Applications
PL 15	12.10-12.40	Prosenjit Saha JIS School of Medical Science and Research Campus, West Bengal, India. Topic: Integrating 3D Printing and Electrospinning for Advanced Engineered Polymer Scaffolds with special reference to Tissue Engineering Applications
		Chairperson: Deepthy Menon (Amrita School of Nanosciences & Molecular Medicine, Amrita Vishwa Vidyapeetham, Kochi, Kerala, India)
IL 6	12.40-13.05	Udit Choudhury, IIT-Roorkee, India Topic: Polymeric Magnetic Micro-swimmers for Targeted Biomedical Applications
IL 7	13.05-13.30	S. Logesh Kumar

		Indian Institute of Technology Madras (IIT-M), Chennai, Tamil Nadu, India Topic: Advanced Biopolymeric Scaffolds Integrated with Green-Synthesized Metal Oxide Nanoparticles and Herbal Bioactives for Enhanced Tissue Regeneration
	13.30-14.30	Lunch Break
		Chairperson: Binulal N. Sathy (Amrita School of Nanosciences & Molecular Medicine, Amrita Vishwa Vidyapeetham, Kochi, Kerala, India)
IL 8	14.30-14.55	Dipti Yadav Jaypee Institute of Information Technology, Noida, Uttar Pradesh India Topic: Polysaccharide based H ₂ O stabilized Mg ²⁺ incorporated electrolyte for high power density ecofriendly supercapacitors
	15.00-19.00	<i>Leisure Trip Mango Meadows World Famous Agricultural Theme Park</i>
	19.00-20.00	DINNER

		3rd Day of the Conference 17th May 2026
		Hall 1
		Plenary Lectures Chairperson: Santosh S Mathapati (BRIC-Translational Health Science and Technology Institute, Faridabad)
PL 16	09.00-09.30	Umakanta Subudhi CSIR- Institute of Minerals and Materials Technology (IMMT), Bhubaneswar Topic: Self-assembled DNA nanomaterials for delivering nucleic acid therapeutics
PL 17	9.30-10.00	Lakshmi V Nair Centre for Nanotechnology, VIT Vellore Topic: Metal Cluster Mediated Cancer Theranostics
		Chairperson: C. T. Vijayakumar (Department of Polymer Technology, KCET, Virudhunagar)
PL 18	10.00-10.30	Jiya Jose Rajagiri College of Social Sciences, Kochi, Kerala Topic: Polymer Nanocomposites for Various Biomedical Applications: Current Status and Future Perspectives
	10.30-10.40	Tea Break
		Chairperson: Umakanta Subudhi (CSIR- Institute of Minerals and Materials Technology (IMMT), Bhubaneswar)
IL 9	10.40-11.05	Abu Bin Imran Bangladesh University of Engineering and Technology (BUET) Topic: Translating Molecular Design into Macroscopic Properties: Next-Generation Smart Biomaterials

IL 10	11.05-11.30	Tahmina Foyez United International University (UIU), Bangladesh Topic: Design of Stimuli-Responsive Biocompatible Hydrogels for Wound Healing and Infection Control
		Chairperson: Lakshmi V Nair (Centre for Nanotechnology, VIT Vellore)
IL 11	11.30-11.55	Sonal M. Manohar Sunandan Divatia School of Science, SVKM's NMIMS, Mumbai – Maharashtra, India Topic: Advances in 3D models and biomaterials for cancer and stem cell research
IL 12	11.55-12.20	Krishna Priya Hazarika The Assam Kaziranga University, Assam Topic: Smart Magnetic Nanomaterials: From Synthesis to Biomedical Applications
IL 13	12.20-12.45	Shahab A. A. Nami Aligarh Muslim University, Aligarh Topic: Next-Generation Multifunctional Hydrogels: Bridging Soft Robotics and Intelligent Wearable Electronics
		Short Invited Lectures Biomedical Applications Chairperson: Jiya Jose (Rajagiri College of Social Sciences, Kochi, Kerala)
SIL 1	12.45-12.55	Lakshmi Krishnan Indian Institute of Technology Madras, India Topic: Flow-engineered Nanobioglass for effective dentinal tubule occlusion and desensitization
SIL 2	12.55-13.05	Mayoori Shetty, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Kerala, India Topic: Enhancing the Aqueous Solubility of Ivermectin Using Cyclodextrin Complexation and Solvent Systems
SIL 3	13.05-13.15	Mohammad Salim, Aligarh Muslim University, Aligarh, INDIA Topic: Biodegradable Cationic Gemini Surfactants as Protein-Compatible Materials: Spectroscopic and Tensiometric Analysis of their Interaction with Porcine Serum Albumins for Biomedical Applications
SIL 4	13.15-13.25	Preyanka.P, Department of Engineering Design, Indian Institute of Technology Madras, India Topic: Understanding Chemotherapy-Induced Neuronal Dysfunction Using a Controlled Co-Culture Microenvironment.
	13.25-14.15	Lunch Break
		Short Invited Lectures Chairperson: Abu Bin Imran (Bangladesh University of Engineering and Technology (BUET))
SIL 5	14.15-14.25	Rajeev Arora IFTM University Moradabad, India Topic: Conducting Polymer Polyaniline, Nano TiO ₂ , PVA, and Its Nanocomposite Applications in Biomedical Applications

SIL 6	14.25-14.35	Saif Uz Zafar Department of Chemistry, Aligarh Muslim University, Aligarh, India Topic: Synthesis, Characterization and Interaction of C ₁₂ -E2O2-C ₁₂ Coated Silver Nanocarriers with Human Serum Albumin
SIL 7	14.35-14.45	Sethulakshmi VS, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Kerala, India Topic: Tuning Microneedle Morphology through Polymer Chemistry
		Chairperson: Udit Choudhury (IIT-Roorkee, India)
SIL 8	14.45-14.55	Atif Afroz Aligarh Muslim University, Aligarh, U.P., India. Topic: Design and Optimization of Silver-Embedded Hyperbranched Polymer-β-Cyclodextrin Nanocomposite for Efficient Amoxicillin Removal from Aqueous Media
SIL 9	14.55-15.05	Mohammad Wasif, Aligarh Muslim University, Aligarh, U.P., India Topic: Development and Characterization of a Polypyrrole@ZIF-67/MoS ₂ Hybrid Nanocomposite for Water Remediation”
		Chairperson: S. Logesh Kumar (Indian Institute of Technology Madras)
SIL 10	15.05-15.15	Perna Sharma Himachal Pradesh University, Shimla -171005, India Topic: Exploration of potential of psyllium to develop network hydrogels for use in anticancer drug delivery
SIL 11	15.15-15.25	Madhav Kumar Jha Dr B R Ambedkar National Institute of Technology Jalandhar- India Topic: Tribological Performance and Wear Mechanism Transition in Biodegradable TiB ₂ Reinforced Mg–12.5Al–2Zn–1.5Ca Nanocomposite
		Chairperson: Tahmina Foyez (United International University (UIU), Bangladesh)
SIL 12	15.25-15.35	Nistha Thakur Himachal Pradesh University, Shimla - India. Topic: Development of carrageenan based hydrogels for use in brain drug delivery devices.
SIL 13	15.35-15.45	Gouripriya D A JIS Institute of Advanced Studies and Research (JISIASR+), Kolkata, India Topic: Cellulose-Based Stimuli-Responsive Hydrogels: A Promising Platform for 3D Bioprinting
SIL 14	15.45-15.55	Mridula Nikhil IIUCNN, Mahatma Gandhi University, Kottayam, Kerala, India Topic: Nanocellulose Green Extraction and Fabrication of Electrospun Composite Membrane for Tissue Engineering
SIL 15	15.55-16.05	Mohd Umar Hayat Aligarh Muslim University, Aligarh, U.P, India Topic:

SIL 16	16.05-16.15	Areeba Khayal Aligarh Muslim University, Aligarh, U.P, India Topic: Next-Generation Multifunctional Hydrogels for Wearable Electronics: Bridging Soft Matter, Sensing, and Smart Interfaces
	16.15-16.30	Tea Break

	16.30-17.00	Closing Ceremony Panel Discussion
	Chair:	Dr. Hanna J Maria Mahatma Gandhi University
		Comments from Audience
		Vote of Thanks and Concluding Remarks
		Prof. Sabu Thomas, Mahatma Gandhi University Kottayam, Kerala, India