

## **PREFACE: 5<sup>th</sup> International Conference on Robotics, Intelligent Automation and Control Technologies (RIACT 2026)**

This proceeding consists of the peer-reviewed papers from the 5<sup>th</sup> International Conference on Robotics, Intelligent Automation and Control Technologies (RIACT 2026), which was organized by the School of Mechanical Engineering at Vellore Institute of Technology, Chennai, India in Association with Teesside University, UK and University of Applied Sciences, Bochum on February from 5<sup>th</sup> to 7<sup>th</sup>, 2026. The main objective of RIACT 2026 is to provide a platform for researchers and practitioners from both academic institutions and industries to meet and share cutting-edge developments in the areas of Robot Design, Development and Control, Rehabilitation Robots and Devices, Intelligent Automation and Fault Diagnosis, Agricultural Robots, Underwater Robots, Development of Drones, Control and Supervision Systems, Vision Systems, Actuators and Sensors, Mechatronics Systems, System Interface and Control, Sustainable Technologies and associated disciplines. This conference also provided an opportunity to exchange research evidence and innovative ideas and also the issues related to Robotics, Automation and Control, Smart and sustainable technologies. This proceeding will include presentations on the latest research areas such as Robot Mechanisms, Control Systems Technologies, AI and IoT in intelligent systems, Sustainability and Industry 4.0. This conference had gathered an excellent group of keynote speakers from around the globe on different topics such as Machine Intelligence for Intelligent Drone Based Post Disaster Operations, From Smart Batteries to Smart Grids- Data-Driven Intelligence for a Sustainable Energy Future, Cobots for traditional crafts, Towards Industrial Deployment of Cleaner Fuels: Process, Control, and Economical Aspects, Enhancing Rover-Based Terrain Mapping with Distributed Visual SLAM and Machine Learning, ROBOTASUDOE: Improving well-being of manual workers through AI-driven collaborative robotic arms, Designing Smart Services for Smart Societies, Advancing AI-Driven Social Innovation for Scalable Global Impact, Experimental Research on Mutual Effects of High Switching Frequency, Dead-time and Control Sample Time on Motor Losses under SiC Inverter Excitation, Sensing and Control of Digital Glass Forming Processes, Intelligent Autonomy of Robot Teams: Towards a Diverse Robotic Ecosystem.

RIACT 2026 was graced with the following eleven keynote speakers namely Professor Dr Chinthaka Premachandra, Shibaura Institute of Technology, Japan; Dr Maher Al-Greer, from Teesside University, UK, Professor Dr Daniel Schilberg, Bochum University of Applied Sciences, Germany, Professor Michael Short from Teesside University, UK; Professor Dr Minoru Sasaki, Gifu University, Japan; Dr Juan Antonio Corrales Ramon, Titular de Universidad en la Universidad de Santiago de Compostela, Spain; Dr Jelena Milisavljevic-Syed, Cranfield University, UK; Mr. Sampathkumar Veeraraghavan, Brahmam Innovations, USA; Dr Gia Minh Thao NGUYEN, Shimane University, Japan; Professor Dr Robert G. Landers, University of Notre Dame, USA; Professor Dr Robin Chhabra, Carleton University, Canada.

We would like to take this opportunity to deeply express our heartfelt appreciation to Dr. G. Viswanathan, Founder and Chancellor, Vellore Institute of Technology; Prof. Dr. rer. nat. Andreas Wytzisk-Arens, President, Bochum University of Applied Sciences; Dr Sankar Viswanathan, Vice President, Vellore Institute of Technology; Dr. Sekar Viswanathan, Vice President, Vellore Institute of Technology; Dr G V Selvam, Vice President, Vellore Institute of Technology; Prof. Dr. rer. nat. Jörg Frochte, Vice President, Bochum University of Applied Sciences; Dr. Sandhya Pentareddy, Executive Director, Vellore Institute of Technology; Ms. Kadhambari S. Viswanathan, Assistant Vice President, Vellore Institute of Technology; Our special thanks to all our Keynote Speakers, Session Chairs, all the Committee Members and Reviewers involved in the technical evaluation of conference papers.

This year, RIACT 2026 had more than 350 participants from around the globe. A total of 412 abstracts and 203 research articles were submitted and based on the double-blind peer review process 46 full length papers were accepted to be published with EPJ web of Conferences after presentations. The evaluation of all the papers was performed based on the reports from

anonymous reviewers. The keynote speakers from across the globe delivered their talk for close to one hour which was based on the theme of the conference. A total of 14 parallel sessions were arranged for the paper presentation by the respective authors in the presence of 2 panel members (session chairs) for each session. Total of 15 minutes for presentation and 5 minutes for discussion was allotted for each paper. At the end of the keynote session, audience were provided 10 minutes to clarify their doubts with the speaker and a member from the organizing committee summarized and thanked the speaker. With regard to the paper presentation, the panel members (session chairs) and audience were given the opportunity to ask questions to the authors regarding their research findings for a duration of 5 minutes. RIACT 2026 keynote speakers from USA, UK, Canada, Spain, Germany and Japan. All the submitted papers were initially screened for plagiarism using TURNITIN software and only those papers which had less than 10% plagiarism were selected for presentation in the conference. Moreover, all the presented papers were double blind peer reviewed by two reviewers and the authors were instructed to submit the revised manuscript based on the reviewers comments. RIACT 2026 has been conducted successfully between February 5 & 7, 2026. It has been planned to organize the 6th International Conference on Robotics, Intelligent Automation and Control Technologies (RIACT 2028) during June - July 2028.

Best Regards,

Editors,

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