

## Opening Address

The honorable Rector of Universitas Gadjah Mada, dear distinguished guests, invited speakers, participants, ladies, and gentlemen, on behalf of the organizing committee, I would like to welcome you all to the 4<sup>th</sup> International Conference on Science and Technology (ICST 2018).

The 4<sup>th</sup> International Conference on Science and Technology consists of seven symposia, namely Computer and Information Technology Symposium; Electronics, Communication, Control, and Instrumentation Symposium; Environmental and Earth Science Symposium; Material Science and Chemistry Symposium; Mechanical and Industrial Engineering Symposium; Power and Energy Symposium; and Remote Sensing and Geomatics Symposium. In addition, the conference committee has invited nine renowned speakers, Prof. Fitri Yuli Zulkifli from Universitas Indonesia; Prof. Gerard Remijn from Kyushu University, Japan; Prof. Hutomo Suryo Wasisto from Technische Universität Braunschweig, Germany; Dr. Deendarlianto from Universitas Gadjah Mada; Prof. Azhar Zam from University of Basel, Switzerland; Assoc. Prof. Rohayu Che Omar from Universiti Tenaga Nasional, Malaysia; Prof. Cheon-Gyu Cho from Hanyang University; Dr. Julius Motuzas from the University of Queensland, Australia; and Prof. Riyanarto Sarno from Institut Teknologi Sepuluh Nopember, Indonesia.

This year, the 4<sup>th</sup> International Conference on Science and Technology (ICST 2018) received 397 submissions from 12 countries throughout the world. All submitted papers went through a rigorous review process and each paper was evaluated by at least three independent reviewers in accordance with the standard blind review process. Based on the results of the rigorous review process, 266 papers have been selected, which constitute the acceptance rate of 67.0 %. The accepted and presented papers will be submitted to journals/proceedings that are indexed by Scopus: IEEE Xplore digital library, Trans Tech Publications, and E3S Web of Conferences. Quality selected papers from Material Science and Chemistry symposium will be published in Indonesian Journal of Chemistry.

The ICST 2018 could not become a reality without the support and assistance of many parties. In this occasion, I would like to sincerely thank the Rector of Universitas Gadjah Mada, BPP officers and staff, invited speakers, and all members of the Organizing Committee. I would also like to thank authors, reviewers, all speakers, and session chairs for their support to ICST 2018.

In addition to the outstanding scientific program, we hope that you will find time to explore Yogyakarta and the surrounding areas. Yogyakarta is a city with numerous cultural heritage, natural beauty, and the taste of traditional Javanese cuisines, coupled with the friendliness of its people.

Lastly, I would like to welcome you to ICST 2018 and wish you all an enjoyable stay in Yogyakarta.

Yogyakarta, 7 August 2018

Chairman of the Organizing Committee,

**Dr. I Wayan Mustika**



## Welcoming Remarks from the Rector of Universitas Gadjah Mada

Dear distinguished speakers, participants, ladies, and gentlemen.

On behalf of Universitas Gadjah Mada, it is my pleasure and privilege to welcome you all to Yogyakarta for the 4<sup>th</sup> International Conference on Science and Technology (ICST 2018), hosted by Universitas Gadjah Mada (UGM). This conference has a role to carry out excellent and useful research for society. As we know, society has never moved faster without the whole acceleration spectrum of science and technology timelines. History of UGM's education has earned a reputation as a pioneering university, pushing the boundaries between academics and professionals across the world, to serve and discover scientific progress as a valuable source of knowledge for the benefit of humankind.

The wonderful thing about ICST is bridging the gap between disciplines through this conference to bring and share their innovation, research, and ideas about our scientific issues today. UGM is proud to be leading the way in facilitating the interdisciplinary research dissemination of cutting-edge information between subjects as diverse as chemistry, computer science, electronics, earth sciences, mechanical, environmental, power, energy, remote sensing, and many others.

After 3 year ago, ICST as a part of Annual Scientific Conference Series, holding annual gatherings for the brilliant minds from Indonesia and abroad to share the latest findings in their fields. It proves UGM's consistency to preserve the international academics relation. This series has been enormous success to bring collaboration with our international partners, shaping the scientific networks, increasing Indonesia author's greatness in the global publications scopes, and with a global readership, and underscoring UGM's place as a standard-bearer of scientific development.

We are honored and humbled to many experts who have attended this year's conference. We thank the speakers for the expertise and knowledge that will bring to spur great discussion during the conference. Special thanks are also extended to the organizing committee members for their hard work, as well as the entire staff of UGM's Badan Penerbit dan Publikasi (BPP) for making and bringing the ICST 2018's realm. And finally, we would like to thank all the conference participants who will contribute to making this truly the most memorable ICST yet. For unfinished business, this event should impact the fields of science, technology and also our humanity for the next many years.

I am sure you will have fruitful and rewarding exchanges in the next two days. I wish you all a wonderful stay in Yogyakarta, and above all a successful ICST 2018.

Thank you.

Rector of Universitas Gadjah Mada,  
**Prof. Ir. Panut Mulyono, M. Eng., D.Eng.**