

The 1st International Conference
on Advanced Engineering & Technology **2018**

ICATECH
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"Multidisciplinary Approach Towards
Sustainable Technology and Industry"



PROCEEDINGS

SATURDAY, SEPTEMBER 29th, 2018

Swiss-Belinn International Hotel & Resorts
Manyar - Surabaya - East Java

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Preface

Message from the Rector of ITATS



It is my great honor, and pleasure, to welcome you, in the name of the Adhi Tama Institute of Technology Surabaya, on the occasion of the 1st International Conference on Advanced Engineering and Technology (ICATECH 2018) held in Surabaya, Indonesia, September 29, 2018.

This seminar is the first international seminar which has the main purpose to bring researchers and academicians to share their knowledge and experience in Engineering, Design, Information System and Technology area. The conference serves as an excellent opportunity to meet each other and to exchange ideas with theme, Multidisciplinary Approach towards Sustainable Technology and Industry.

This proceeding contains selection papers from graduate students, faculty members, researchers, and academia from various universities and research institutions, and also professional associations and other related organization in infrastructure area. The selected papers are selected based on the paper quality and the relevancy to the theme.

Total 52 manuscripts are selected to be submitted in IOP Conference Series: Materials Science and Engineering and to be presented in ICATECH 2018 seminar. Our deepest gratitude to all of our speakers, participants and contributors who have given the ICATECH 2018 their generous supports. Also to all the reviewer who helped us managing the papers so that all the manuscripts are well written. Many thanks are due to all our Organizing Committee members for their dedication and continuous efforts and hard work in preparing and organizing the seminar. We would like also to thank to all members of the Steering Committee, Scientific Committee and our distinguished international board of reviewers for all their support and advice.

Dr. Syamsuri, Adhi Tama Institute of Technology Surabaya

On behalf of ICATECH 2018 Organizing Committee

Message from chair of organizing committee



Honorable Kopertis Region VII of Coordinator of private higher Education,

Honorable Rector of Institut Teknologi Adhi Tama Surabaya (ITATS), Assoc. Prof. Syamsuri PhD, Honorable the Director of ITATS Foundation, Ir. H. Abdul Zikri, MM.

Honorable Keynote Speakers and Participants, Distinguished Delegates, Guests, Ladies and Gentlemen,

Dear colleagues,
Assalamualaikum. Wr. Wb.

At this precious moment, let me first express our sincere thankfulness to God, who has granted us with blessings and grace that we could gather here today to attend the first International Conference on advanced engineering and technology (ICATECH 2018). Let me extend my warmest greetings and welcome to particularly the keynote speakers, Prof. Bon-Yong Koo, MSc, Prof. Kuo Lung Lian, Robertus Theodore and participants. It is both a pleasure and honor for me to welcome you all to the ICATECH 2018

This seminar organized by Institut Teknologi Adhi Tama Surabaya (ITATS) is the first international seminar which is to bring researchers and academicians to share their knowledge and experience in Engineering, Design, Information System and Technology area. The conference serves as an excellent opportunity to meet each other and to exchange ideas with theme, Multidisciplinary Approach Towards Sustainable Technology and Industry. Serving as a platform for science and technology dialogue, this seminar will have 3 keynote speakers from Executive Staff of Deputy-I, Executive office of the president, Republic of Indonesia, Jakarta, Indonesia, Kunsan National University (South Korea), and National Taiwan University of Science Technology (NTUST), Taipei, Taiwan. Moreover, this seminar has gathered 180 papers from SNETKAPAN 6 and ICATECH. Selected authors will be invited to submit their full paper to IOP Conference Series: Material Science and Engineering and IPTEK Journal of Proceeding series.

This seminar will be divided into three sessions, the first session is the opening ceremony, the second session will be keynote speaker's presentation, and the last session is parallel session presentation by authors. We have identified about 200 participants in this seminar who originated from graduate students, faculty

members, researchers, and academia from various universities and research institutions, and also professional associations and other related organization in infrastructure area. Through this seminar it is also expected that participants may perform research collaboration and define the plans for their future research directions.

My deepest gratitude to all of our speakers, participants and contributors who have given this seminar their generous supports. I would like to express our gratitude and thanks against to all the keynote speakers who have volunteered and spent their busy schedule to contribute to this special event. Many thanks are due to all our Organizing Committee members for their dedication and continuous efforts and hard work in preparing and organizing this seminar. I would like also to thank to all members of the Steering Committee, Scientific Committee and our distinguished international board of reviewers for all their support and advice. To our main and supporting sponsors, our most gratitude and thanks for their generous contributions to make this seminar happened. We also owe our success to the full support of the Rector of ITATS and the Director of the LPPM.

Allow me to wish all of you a meaningful and rewarding seminar. Thank you and we hope to see you again at the second ICATECH 2019 and SNTKAPAN 7

Thank you. Wassalamualaikum Wr. Wb.

Kurnia Hadi Putra
Chair of ICATECH 2018

Statement of Peer Review

All papers published in this volume of IOP Conference Series: Materials Science and Engineering have been peer reviewed through processes administered by the proceedings Editors. Reviews were conducted by expert referees to the professional and scientific standards expected of a proceedings journal published by IOP Publishing.



Biodata of Speakers

Keynote Speaker I



Prof. Bon-Yong Koo

Assistant Professor at School of Mechanical System Engineering Kunsan National University

Bonyong Koo received his Ph.D. degree in Naval Architecture and Ocean Engineering, Seoul National University, 2012. He has 15 years' industrial experience in naval shipbuilding and offshore engineering companies. He has been a faculty member in Department of Mechanical Engineering, Kunsan National University since 2017. His research interests include a structural optimization and measurement technologies.

Keynote Speaker II



Prof. Kuo Lung Lian

Associate Professor at Department of Electrical Engineering National Taiwan University of Science and Technology

Prof. Kuo Lung Lian is an Associate Professor in NTUST, Taiwan. He obtained his Ph.D. in University of Toronto, Canada. His research areas include power quality analysis, energy management system, renewable energy system, real-time simulation, and power electronic control system. His publication was cited 643 times with h-index 15.

Keynote Speaker III



Robertus Theodore

Executive Office of the President, Republic of Indonesia

Robertus Theodore is currently Executive Staff of Deputy-I at Executive Office of The President, Republic of Indonesia. His roles as an executive staff are plan, monitor, and evaluate the National Priority Program of Indonesia. He was the one who lead the development of Portal Data Indonesia (data.go.id); a single, authoritative data portal for the national Government of Indonesia in 2014.