

## PREFACE

On behalf of the 2nd Nommensen International Conference on Technology and Engineering, I would like to welcome you all speakers and participants to our campus in Medan. This city is fascinating with its culinary tourism offering tropical fruit like durian and various food and cakes that spoil our tongue. Beside its culinary tourism, the city of Medan is close to a dynamic business city with relevant past in agriculture and plantation. We hope you will have the opportunity to enjoy the food and your time while staying in this city.

This conference is the second time the NICTE series was conducted by our university. The current theme is “Sustainable Engineering, and Technology Innovation and Application.” The theme is selected with the objective to bring more innovation in technology application to the current development in this city and the whole country of Indonesia. The great effort dedicated by our government to expedite the construction of massive infrastructures requires more technology innovation and application. Our contribution to this conference however small is also of valuable input to the current government effort in developing this country.

I would like to take this opportunity to thank all the committee, speakers, authors, reviewers and participants who dedicated their effort for the successful execution of this conference. Without your contribution, we simply could not have had this conference.

We received more than 140 submissions in this time. They came from various countries like Czech, Malaysia, Turkey and Russia in addition to those from Indonesia. We categorised the papers under seven groups, namely: Civil and Environmental Engineering, Mechanical Engineering and Technology, Electrical Engineering, Material Sciences and Engineering, Food and Agriculture Technology, Informatic Engineering and Technologies, Medical and Health Technology. Some papers can be categorised conveniently into one of these groups. Others bring their own difficulties because they might be put under more than one group. Still, the committee has done a great job to send your paper to the right reviewer. All papers regardless of their standing or initial classification, were available for general discussion at the task force meeting.

We are fortunate to have five distinguished keynote speakers at the moment. They are David Herak from CULS, Badorul Abu Bakar from USM Malaysia, Shyh Leh Chen from CCU Taiwan, Katsumi Suzuki from Shizuoka University Japan and Himsar Ambarita from USU Indonesia. David Herak is currently doing extensive work in biofuels and renewable energy. Badorul Abu Bakar interest is concrete technology and brick structures. Shyh Leh Chen has filed for a patent on active magnetic bearings. Katsumi Suzuki is leading research work on plant production and environmental agriculture. Himsar Ambarita currently leads a research centre focusing on sustainable energy and biomaterial. I would like to give thanks to the five of you for the interesting keynote speech at this conference.

Finally I hope that all participants enjoy a successful conference, make a lot of new contacts, engage in fruitful discussions and have a pleasant stay in Medan.

Richard AM. Napitupulu  
2nd NICTE CHAIRMAN



## 2nd NICTE

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Faculty of Engineering  
Nommensen HKBP University

#### ORGANIZING INSTITUTION

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Czech University of Life Sciences Prague  
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Prof. Katsumi Suzuki, PhD, Shizuoka University,  
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Assoc. Prof. Dr. Himsar Ambarita, USU, Indonesia

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