

# PREFACE

## WELCOME FROM THE DEAN OF FACULTY OF ENGINEERING

### UNIVERSITY OF MATARAM



First of all, let us praise God Almighty who has bestowed upon us His blessing and thus allow us to participate in the very important event for academicians and scientists around the world. I am delighted that the EMTech Research Group of Faculty of Engineering University of Mataram in co-operation with University of Indonesia and GFZ Potsdam Germany are finally able to organize the strong academic tradition called the 1st International Conference on Applied.

Electromagnetic Technology. The 1st International Conference on AEMT is the culmination of more than one year hard works by the joint committee since the typical event needs a long and well preparation. As a very prestigious event involving many scientists and researchers from different continents, it is truly an honor to organize and to host this scientific event.

We have to admit that Indonesia only contributes a very small part in top-rated research. In our home countries, it can hardly go unnoticed that there is a serious lack of world-class scientific institutions, and yet disturbingly we also see that there is no lack of scientific talent. The existence of Lombok Geomagnetic Observatory can bridge this unusual and extraordinary imbalance. The observatory renders an important contribution for the scientific investigation of the Earth's interior and environment. In the future, the investigation from the observatory will benefit the global research community when the observatory joins the Intermagnet network.

The interest from researchers and scientist around the world is a clear signal that in the right term, global community and Indonesian government together with local authorities can expect to feel positive effect from this event. We are certainly looking forward to bringing this initial step of inauguration of the Lombok Geomagnetic Observatory to the world scientific community. This not beyond our reach if we can establish the links with other key players in the associated areas. The majority of participants who are representing higher institutions as well as research institutions show the importance of the role that the universities and research institutions have to play in bringing quality researches into global development.

Finally, I would like to express my sincere thanks and appreciation to all sponsors who contribute to this event. To all participants who have come from different continents, I would like to extend my very warm welcome to this conference. I wish you all to have a productive and fruitful discussion.

**Yusron Saadi, ST., M.Sc., Ph.D**  
**Dean**  
**Faculty of Engineering, University of Mataram**

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## WELCOME FROM THE 1<sup>st</sup> AEMT 2014 ORGANIZING COMMITTEE



Welcome to the 1<sup>st</sup> International Conference on AEMT (Applied Electromagnetic Technology). It is a great pleasure for the Faculty of Engineering University of Mataram in collaboration with University of Indonesia to be able to hold this conference. This event is the first international conference held by Faculty of Engineering University of Mataram. It is a new spirit of strengthening to hold such a conference in the future, which would greatly support the success of the Faculty of Engineering University of Mataram towards "Go International" in 2025.

The theme of the 1<sup>st</sup> AEMT is "The Lombok Geomagnetic Observatory Inauguration": a support for environmental monitoring & discovery of new natural resources. Underlying this theme is the inauguration of the Lombok Geomagnetic Observatory that has launched on 11 April 2014 in Central Lombok District by Minister of Research and Technology.

The aim of this International Conference is to provide an international forum for exchanging knowledge and expertise as well as creating a prospective collaboration and networking on various fields of science, engineering, and especially, applied geomagnetic technology along with its supporting fields.

Although this first international conference is a specific themed conference, many of interested speakers participate to present and discuss their ideas related with geomagnetic and its various supporting fields such as New-Renewable Energy, Telecommunication, signal processing, Data Management & Information Systems, and Miscellaneous related aspect to Electromagnetic Technology.

This conference will have 3 keynote speakers, 4 invited speakers, and has gathered 43 papers from various universities and institutions from both domestic and overseas. My deepest appreciation to our speakers, observers, sponsors, contributors, and supported parties who have given their generous supports. I would also like to thank all members of the Organizing Committee and our distinguished Reviewers for all of their supports and advices as well as the IJTech Journal of University of Indonesia that will publish some selected papers.

Allow me to wish all of you a meaning and rewarding conference. We wish you a pleasant and memorable stay in Lombok. Thanks you and we hope to meet you again at AEMT 2018.

**Misbahuddin, ST., MT**  
**Chairperson of 1<sup>st</sup> AEMT 2014 Organizing Committee**