

## FOREWORD

The geological hazards are natural phenomena that we have frequently faced in this earth. Over the years, many geohazards have left many pains and lessons to be learned by people, scientist, and engineering communities. It is essential for us in putting forward policy to mitigate similar natural hazard in future. There are so many factors to be considered that it is practically difficult to forecast the geohazard and its level of the damage to the built system. Sharing idea, insight, and knowledge in such an event is very critical to promote the mitigation of geohazard.

The Civil Engineering Program, Universitas Muhammadiyah Sumatera Utara (UMSU), Medan, Indonesia; Indonesian Engineers Society of Wind and Earthquake Resistant Structures (HASTAG); and School of Civil Engineering, Universiti Sains Malaysia, have collaboratively conducted the 3rd International Conference on the Geohazard Information Zonation and 5th Seminar & Short Course of HASTAG (GIZ2014-HASTAG5) in Medan, Indonesia, from October 20-22, 2014. The program was consisted of conference, seminar, and exhibition of construction and material technology in two days. A short course of Structural Modeling for Earthquake Engineering with OpenSees was preceded in the final day. Therefore we pleased to present this collection of papers submitted to GIZ2014-HASTAG5.

The program committee would like to thank all those who submitted papers for review. Papers were evaluated regarding their relevance to GIZ2014-HASTAG5, originality, significance, information content, clarity, and soundness on an international level. Each aspect was objectively evaluated, with alternative aspects finding consideration for application papers. Therefore, we would like to thank the members of the GIZ2014-HASTAG5 technical committee from School of Civil Engineering, Universiti Sains Malaysia, namely Associate Professor Ahmad Shukri Yahaya, Associate Professor Dr. Taksiah A. Majid, Dr. Lau Tze Liang, Dr. Mohd Ashraf Mohamad Ismail, and Dr. Fadzli Mohammed Nadzli. Their continuing support has been essential to further improve the quality of accepted submissions the resulting success of the conference.

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