1st International Conference on Maritime Sciences and Advanced Technology “Ocean Science and Technology Toward a Global Maritime Axis”

Preface

The Institut Teknologi Bandung (ITB) will celebrate 100 years anniversary in 2020. One of the faculty, the Faculty of Earth Science and Technology (FEST) celebrated the 10th anniversary by November 2017. The Department Oceanography is within this Faculty. In accordance to government vision to put the nation "Toward Maritime Axis", we decided to take advantage of this momentum by organizing *The 1st Maritime Sciences and Advanced Technology (MSAT)* conference on August 3-5, 2017 in Denpasar, Bali. This conference is one of the implementations of our Memorandum of Agreement between the Faculty of Earth Science and Technology - ITB, Geospatial Information Agency of Indonesia, and the Ocean College Zhejiang University.

About 70% of Indonesia is covered by ocean. Indonesian seas with complex coastline geometry, topography, and passages provide the only direct communication between the tropical Pacific and Indian Ocean known as Indonesian throughflow (ITF). Indonesia as one of the largest archipelago on Earth, plays a pivotal role in global ocean circulation and weather climate system. It hosts the strongest equatorial convective center that drives the global tropical atmospheric circulation. Along the route within the Southeast Asian seas, the water undergoes strong tidal mixing and air-sea interactions and other oceanic/atmospheric climatic processes associated with upwelling, Madden-Julian Oscillation (MJO), monsoon, El Nino Southern Oscillation (ENSO) and possibly the Indian Ocean Dipole (IOD). Hence, Indonesian seas are the centre for Tuna fishing ground, world-most diverse marine biodiversity, and the same time prone to natural hazard associated with extreme climate events associated with ENSO and IOD. Fisheries and marine resources serve as main income generating sector for people in coastal areas. Because of strong tidal currents and many narrow passages with, many straits provide an ideal place for tidal current renewable energy. Therefore, our first MSAT conference theme was "Ocean Science and Technology Toward a Global Maritime Axis" covered broad topics such as ocean-atmosphere dynamics, marine biogeochemistry, air-sea interactions, fisheries, food security, marine environment and pollution to marine technology and renewable energy. The Conference had been a good opportunity for participants coming from China (38 scientists), Japan (2 scientists), Australia (2 scientists), USA (2 scientist), Bangladesh (2 scientists), UK (1 scientist), India (1 scientist), Germany (1 scientists), Malaysia (1 scientist), Turkey (1 scientist) and Singapore (1 scientist) to present and discuss topics in their respective research areas.

This Conference Proceeding provides an opportunity for readers to engage with refereed papers presented during the 1st MSAT. The papers published in this proceeding were selected from a total of 110 oral presented and 52 flash presented papers. This proceeding is divided into eight (8) mini-symposia: (1) Ocean and Coastal Dynamics**,** (2) Climate Change and Biogeochemical Processes**,** (3) Air-Sea Interaction and Climate Variability**,** (4) Marine Disasters and Hazards & Marine Degradation**,** (5) Living Marine Resources (Sub-theme : Coastal Conservation, Biodiversity, Marine Pollutant, Marine Food Security and Aquaculture, (6) Non-living Marine Resources (Sub-theme : Marine Geology and Marine Renewable Energy), (7) Satellite and Ocean Remote Sensing, (8) Marine Technology

(Sub-theme: Offshore Technology, Underwater Acoustic and Ocean Observation)**.** Therefore, in this Conference Proceeding, readers might discover the recent issue and results of research in the broad topics of maritime science and advanced technology.

We would like to sincerely appreciate all parties for the successful of the 1st MSAT. We express special acknowledgement for the Head of Geospatial Information Agency of Indonesia for their generous financial and technical supports for this conference, the Ministry of Research and Technology – Higher Education of Indonesia for the financial support, and Udayana University for the venue support and hospitality, which allowed all foreign participants to enjoy the conference. We deeply express our gratitude for the organizing committee, keynote and invited speakers, reviewers, editors, and editing staffs for fully dedication, tireless efforts, and continuing hard work along the conference events and the process of this proceeding publication. We also deeply appreciate all of participants and authors for the excellent participating and taking the best opportunity for disseminating, discussing, and publishing the papers. We deliver appreciation to many participants from Zhejiang University, together with their honourable Professors and Presidential boards. Finally, we hope this proceeding provides the readers up to date and prominent information in maritime science and advanced technology from various points of view.

Chief editor,

R. Dwi Susanto, PhD.
Adjunct Professor, Faculty of Earth Science and Technology - ITB, Indonesia.
Department of Atmospheric and Oceanic Science, University of Maryland, College Park, USA.


Maritime Sciences and Advanced
(MSAT)
MSAT


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Departement Of Oceanography - Faculty of Earth Science and Technology
1st International Conference on Maritime Sciences and Advanced Technology
August 3 - 5, 2017, Udayana University, Denpasar, Bali Island
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1st International Conference on Maritime Sciences and Advanced Technology
"Ocean Science and Technology Toward a Global Maritime Axis"
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