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The 2nd International Joint Conference on Science and Technology (IJCST) 2017

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Preface

Ladies and Gentlemen,

It is my great pleasure to welcome you all to The 2nd International Joint Conference on Science and technology –IJCST 20176 in Nusa Dua Bali-Indonesia 27-28 September 2017. This conference is multidisciplinary including engineering and social science and hope can dedicate a positive contribution to science and technology development. Hosted by Bali State Polytechnic (PNB) and other established university partner including UPNV Jatim, FMIPA-UNISA, FISH-UNESA, and UTM, this conference are attended by more than four hundreds participants who present their best research results.

Papers have been reviewed by peer reviewers and already presented orally in the conference and already selected to be published in **Journal of Physics: Conference Series** (<http://jpcs.iop.org>) These were then been reviewed again and final submission by IJCST 2017 Committee to the journal due date on 24 November 2017. With high confidence, depend on the paper topic and quality will can reach aim and topic of the conference **“As an international platform for scholars, researchers, practitioners, and government to discuss interdisciplinary research and practices that focuses in the theme of “Science, Technology, Innovation, and Culture for Sustainable Development: Challenge for Green Industry”**.

We would like to extend our warm and sincere thanks to authors for great contribution in this conference. Hopefully all participants and authors can extend to build a networking each other in order to improve the research quality in future.

Sincerely yours,

IJCST 2017 Committee



Remark from Conference Chair

The honourable Minister of Tourism Republic of Indonesia
Distinguish guest and participants of IJCST 2017
Welcome to Bali – a wonderful Indonesia



The past few years has witnessed the idea of “Green Economy” flowing out from its realm of environmental economics. It is now omnipresent in mainstream policy discourse, our popular culture, industries, and development of disruptive technologies. It has successfully won the headspace and commitments of the world leaders as reflected in the Paris Agreement, the United Nations Sustainable Development Goals, G20 communiqués.

The time to debate about whether we should transition to a green economy has now ended. It has been agreed upon to be the only way forward. However; shifting from the traditional 20th century model to a new green society requires massive investment and transformative disruptions. Delivering this ambitious global project requires strong public-private-partnerships and cross-sector collaborations. The 2nd International Joint Conference on Science and Technology (IJCST) 2017 aims to advance both by providing a multi-stakeholder platform for concerted action, research, and sharing of best practices under the theme “Science, Technology, Innovation, and Culture for sustainable development: Challenge for Green Industry”

I would like to welcome all of you to the IJCST 2017 and express my gratitude for the expertise you bring to our gathering. You are truly our greatest asset today and I encourage you to stay engaged, keep us proactive, and help the world shape the future of green economy.

I wish you a great conference and wonderful time in Bali.

Sincerely yours,
Conference chair
Dr. Ir. Lilik Sudiajeng, M.Erg

Welcoming Addressed by Director of Bali State Polytechnic

You're Excellency Minister of Tourism Republic of Indonesia
Distinguish guest and participants of IJCST 2017

Good morning

It is my pleasure welcoming you in Bali-the wonderful Indonesia, to attend the International Joint Conference on Science and Technology (IJCST) 2017.

This is the 2nd IJCST, which is held by Bali State Polytechnic, in collaboration with University of Pembangunan Nasional Veteran-East Java; University of Trunojoyo Madura-East Java; State University of Surabaya-East Java; and National Cheng Kung University Taiwan.

The conference is to aim an international platform for scholars, researchers, practitioners, and government to discuss interdisciplinary research and practices under the theme of "Science, Technology, Innovation, and Culture for Sustainable Development: Challenge for Green Industry". This theme is raised as a manifestation of the academic community's sensitivity towards global environmental issues that are now shifting from the issue of global warming to green economics.

It is an honor for me to convey that over 350 participants attended this conference from 14 countries. I give highly appreciation for your attendance. Your presence at this conference is very important to help the world in formulating green industry that leads to green economy.

Finally, wishing you a great conference and enjoy Bali, the wonderful Indonesia.

Bali State Polytechnic
Director,

Ir. Made Mudhina, MT.



Speech by Minister of Tourism



OPENING SPEECH

MINISTER OF TOURISM, REPUBLIC OF INDONESIA

*International Joint Conference on Science and Technology (IJCST),
Nusa Dua Bali, 27 September, 2017*



First of all I would like to extend my appreciation and gratitude to the committee of International Joint Conference on Science and Technology (IJCST) for exposing the theme of the conference on Science, Technology, Innovation, and Culture for Sustainable Development: Challenge for Green Industry. The theme is strongly intersected with global tourism development, since tourism is an integrated economic development involving high technology, innovation, culture and natural sphere.

The theme has clearly revealed that sustainable tourism, as part of sustainable development, is a joint effort among stakeholders. Multi-disciplinary research has to be constantly and mutually done to create green tourism economy, where tourism can be a catalyst of natural and cultural preservation, at the same time improving people's quality of life. Tourism development requires advanced technology, in transportation, information, and communication sector to ease tourist movement in accessing main attractions. Culture and nature are the main attractions for tourism, the question is how are they utilised to generate foreign exchange earnings but at the same time managing its sustainability.

It is imperatively expected that this scientific gathering will bring about new ideas and solutions as well as mutual commitment among practitioners and academicians to make tourism more sustainable and responsible, as mandated by UNWTO. Sustainable development is dealing with present and future generations welfare. Sustainable tourism is actually defined by the resonance of its sustainable development, benefiting present and future tourists and communities and viable within indefinite time, maximizing its economic gains.

Indonesia's tourism is mainly based on culture and nature as its main portfolio products. Resources related with the portfolio products has to be carefully and responsibly managed to ensure its sustainability. Research in new technological inventions and innovations have to be continuously developed to promote better tourism for our present and future generations. We cannot avoid using technology especially for the connectivity and digital marketing of our tourism, but we have to manage it to maximize its economic, cultural and natural benefit. I do hope that this conference will provide a great opportunity for the participants to share and understand both local and global issues of tourism development.

Wishing you all a very fruitful and rewarding conference.

Greetings from **Wonderful Indonesia**

Jakarta 18 September, 2017

Dr. Ir. Arief Yahya, M. Sc.
Minister of Tourism, Republic of Indonesia

Speech by Rector of Trunojoyo University Madura

Guest of Honour, Dr. Ir. Arief Yahya, M.Sc.
Minister for Tourism, Republic of Indonesia.
Mayor of Denpasar City,
Ida Bagus Rai Dharmajaya Mantra, SE.,M.Si.
Distinguished speakers,
Researchers and Colleagues,
Assalamu'alaikum Warohmatullahi Wabarokaatuh.



Praise goes to the most merciful God Allah SWT for the blessings of life and knowledge for us to gather on this meaningful occasion.

To start with we would like to warmly welcome the eminent speakers and delegates who have come from all over the world. We are indeed honoured to have you here with us, making this conference a truly international one.

Ladies and gentlemen,

The university of Trunojoyo Madura is located on Madura island as a part of East Java province area, and currently, it is on 16 years old. This university has committed to escalating its educational process and research activity. It is because those processes play a pivotal role to aim the vision of University of Trunojoyo Madura for a period 2014 – 2018. One of main strategies to achieve the University's vision is by implementing a cluster approach in order to increase the University of Trunojoyo Madura's competitive advantage. This approach is carried out by strengthening our research based on six potential sectors. These sectors are (1) salt and tobacco sectors, (2) food commodities sector (corn, cassava, cane, cattle, and sea commodities), (3) energy sector (oil and gas, renewable energy), (4) educational sector (formal and informal education), (5) social sector (worker and women studies), and (6) tourism and creative economic. All of these sectors are regarded to Madura resources.

Ladies and gentlemen

We do realise that the process of strengthening our research cannot be accomplished by ourself. It would be hard for the University of Trunojoyo Madura if only relaying it on our internal resources. A mutualism collaboration is needed, a collaboration which involves other external parties including universities, governments, businesses, and any other parties. Therefore, on this occasion, Faculty of Engineering, University of Trunojoyo Madura runs an International Conference for the second time called ICOSE (International Conference on Science and Engineering). The ICOSE is held in collaborating with several big universities namely Bali State Polytechnic, University of Pembangunan National Veteran of Surabaya, State University of Surabaya on one event named IJCST (International Joint Conference on Science and Technology) 2017. We hope that this conference will generate an advantageous knowledge sharing about previous research results and bright outlooks. Henceforward, University of Trunojoyo Madura wishes could achieve its vision with a better result.

In closing, we encourage delegates to participate actively in interesting discussions over the seminar periods. I wish everyone has a successful and fruitful conference.

Thank you very much

Wassalamu'alaikum Warrahmatullohi Wabarokaatuh

Speech by Rector of State University of Surabaya

It is with great pleasure that I extend my warmest welcome and best wishes to all keynote speakers, presenters, and participants of the 2017 International Joint Conference on Science and Technology (IJCST), “Science, Technology, Innovation, and Culture for Sustainable Development: Challenge on Green Industry.”



IJCST has worked with partners from higher education institutions and polytechnic from Indonesia and People’s Republic of China, namely UPN Jawa Timur, Universitas Negeri Surabaya, Universitas Trunojoyo, Politeknik Negeri Bali, Politeknik Negeri Jember, and National Cheng Kung University. Each institution contributes largely to the success of the 2017 IJCST by gathering academics and professionals across the country and overseas with aims at sharing recent investigations of the theme and hoping they would be fruitful to stakeholders in resolving challenges on green industry.

With regards to challenges that Indonesia and countries at the global level encounter particularly demographic plus in 2020 and a surge of primary needs including clean environment as well as increased international mobility of people from various cultures, the 2017 IJCST plays a crucial role in offering innovations and resolutions of those challenges. By so doing, proposals and recommendations withdrawn from the present conference will then serve as the basis for relevant stakeholders in policymaking.

I have always believed that IJCST has been an insightful platform for intellectuals and practitioners to continuously create breakthroughs in support of achieving sustainable development. My best wishes for a fruitful and productive conference.

With regards,

Prof. Dr. Warsono, M.S.
Rektor

Speech by Rector of University of Pembangunan Nasional Surabaya



Assalamualaikum Wr. Wb. , Good Morning

Honorable Guests:

Ministry of Tourism of Republic of Indonesia, "Ir. Arief Yahya, M.Sc"

Governor of Bali, "Made Mangku Pastika"

Directorate General of Research and Development, "Dr. Muhamad Dimiyati, M.Sc."

Director of Bali State Polytechnic, "Ir. Made Mudhina, M.T."

Honorable Keynote Speakers :

Mayor of Denpasar City, "Ida Bagus Rai Dharmawijaya Mantra, SE, M.Si"

Head of Badung Regency, "Nyoman Giri Prasta, S.Sos"

Attache of Educational Affairs – Embassy of France in Indonesia, "Prof. Dr. Emilienne Baneth Nouailhetas"

Prof. Dr. Zakaria Hossain, Prof. Moonyong Lee, Prof. Jyh-Ming Ting, Dr. Yusri Yusof, Reviewers, and Last but not least beloved participants,

Thank God for granting us with blessings, that we could gather here today in this very special moment, "International Joint Conference on Science and Technology 2017" organized by UPN "Veteran" Jawa Timur, Bali State Polytechnic, National Cheng Kung University, University of Trunojoyo, Surabaya State University, and Jember State Polytechnic.

Ladies and Gentlemen,

Environmental problems has been a very significant issue for many parties, especially for business actors. Either help the environment and hurt your business, or irreparably harm your business while protecting the earth. With such problems, it might be wise for us to focus on the promotion of several environmental-friendly steps, some to mention are low-carbon paths to industrial development; efficient use of non-energy raw materials; adoption of relevant products and technologies to meet environmental standards; adoption of environmental and related management systems with a view to entry into global value chains; and creation of businesses that can offer services in these areas.

The theme chosen is concerning with the current problem, Green Industry which is related to the increasingly polluted environment as well as the increasingly expensive energy problems that needs finding ways of savings. It is gratifying to note that the agenda of the seminar covering a wide range of very interesting items relating to the theme.

We believe this seminar is a great opportunity for all delegates to discuss the existing problems concerning science, technology, innovation, and culture for sustainable development in answering challenges for green industry.

Distinguished guests,

I wish this moment not only could enrich a broader knowledge, but also make new friends, and build net working in creating better future.

At last but not least, I would like to express my greatest appreciation to everyone who has supported and brought this seminar into success, and we truly apologize for any inconveniences may arise during the seminar.

Thank you

Wassalamualaikum Wr. Wb.

Denpasar, September 27, 2017

Rector of UPN "Veteran" Jawa Timur

Prof. Dr. Ir. H. Teguh Soedarto, MP

Conference Photographs















Sponsor or funding acknowledgements

We are delighted to acknowledge the financial support received from Bali state Polytechnic- Ministry of Research , Technology and Higher Education- Indonesian Government and also the excellent support received from Mayor of Denpasar City, Governoor of Bali Province, Rector of Trunojoyo University Madura, Rector of State University of Surabaya, Rector of University of Pembangunan Nasional Surabaya.

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