



DR. IR. NI KETUT SARI, MT

Chairman of Bisstech III
University of Pembangunan Nasional “Veteran” Jawa Timur
Surabaya, Indonesia

Om Swasti Astu, Good morning.

Minister of Research and Higher Education of Indonesia.

Governor of Bali.

Our distinguished guests, speakers, and participants of the seminar.

Welcome to “Bali International Seminar on Science and Technology” or the third BISSTECH, held by University of Pembangunan Nasional “Veteran” Jawa Timur, State Polytechnic of Bali, and National Cheng Kung University – Taiwan. Therefore, I really appreciate the topic of the seminar: "TOWARDS THE FUNDAMENTAL AND APPLIED RESEARCH FOR SOCIO-ENVIRONMENTALLY SAFE INDUSTRIAL DEVELOPMENT".

Ladies and Gentlemen,

On behalf of the committee, please allow me to deliver a short report on the seminar. The objective of this seminar is to share ideas of recent research results from industries, institutions/universities, and government related to Chemical Engineering, Food Technology, Industrial Engineering, Technology And Information Systems, Civil Engineering, Mechanical Engineering, Electrical Engineering, Accounting, Business Administration And Tourism. In this moment, we do hope that all participants will have the opportunity to share their brilliant ideas through effective communication in order to solve the problem of fundamental industrial technology sustainability.

The attendances are from 9 countries, consisting of 202 authors, 5 keynote speakers, and 48 reviewers and scientific committee. On behalf of the committee we'd like to appreciate your participation & excellent works for making this seminar possible and bringing it to success. We'd also like to express our grateful to our honorable guests from UPN “Veteran” Jawa Timur, PNB, NCKU, Sponsors (Pertamina EP, Patrajasa Logistik, Semen Indonesia, Fajar Mas Murni, Dinas Perindustrian dan Perdagangan Jawa Timur di Jember, PT. Gunung Bale, Novis Nature Vavita, Tamara Overseas Corporindo, Bapak Sony), and also Alumni of Chemical Engineering of UPN “Veteran” Jawa Timur, for the supports they have given to us. There is no better words we could say except thank you so much.

Ladies and Gentlemen,

This program will be held for 3 days. Today & tomorrow will be research results sharing sessions. Tonight, the Governor of Bali is willing to greet you at his office for gala dinner while tomorrow night, State Polytechnic of Bali will welcome you for a dinner at Jimbaran beach. The day after tomorrow, those of you who are willing to go for a sightseeing program will have the opportunity to relax and enjoy the beautiful scene and culture of Bali. Please contact the committee for registration and guidance. If you still have time, please extend your stay in Indonesia to see the other beautiful

places in Indonesia, such as Surabaya, or Lombok Island, and others, which are very nice and close from Bali.

Ladies and Gentlemen,

We really hope that the seminar would give a contribution in creating a better future for mankind. We deeply apologize for all the inconveniences you might experience during the sessions of this seminar. Thank you.

Om Shanti Shanti Shanti Om.



NYOMAN INDAH KUSUMA DEWI, SE, MBA, PH.D

Chairman of Bisstech III
Bali State Polytechnic, Indonesia

Excellencies: Minister of Research, Technology and Higher Education - Mohammad Nasir and Governor Bali - Made Mangku Pastika

Distinguished Participants,

Ladies and Gentlemen:

Good morning,

It is my privilege, as General Chair from Bali State Polytechnic, to welcome all of participants of Bali International Seminar on Science and Technology (Bisstech) III 2015 with the topic: **"Towards Fundamental and Applied Research For Socio-Environmentally Safe Industrial Development"**.

This international seminar is jointly organised by Bali State Polytechnic, the Faculty of Industrial Technology, University of Pembangunan Nasional (UPN) "Veteran" Jawa Timur, and the Engineering College of National Cheng Kung University-Taiwan based on the same passion to provide a national industrial development strategy based on national natural resources. I have great confidence that Bisstech III will able to contribute ideas, strategy, theoretical and practical knowledge to achieve the underlying purpose of this seminar.

I would like to take this opportunity to express my sincere gratitude and appreciation to the honorable speakers: Professor Pao-Shan Yu from Taiwan; Professor Dr. Wolfgang W. Schmahl from Germany; Prof. Inocencio E. Buot, Jr, PhD from Philippine; and Prof. Yasushi Kiyoki from Japan for sparing their precious time to participate in this seminar. I would also like to extend my thanks to all presenters and participants for their participation. My deep appreciation to the organising committee for their hard work, without them this seminar would not be made possible.

Finally, I wish this fruitful 2 days will be beneficial for all of us as the academia and researcher by sharing and exchanging our knowledge and experiences for the better future. And enjoy your time to explore the beautiful Bali.

Thank you.
General Chair

Nyoman Indah Kusuma Dewi, SE, MBA, Ph.D



PROF. DR. IR. H. TEGUH SOEDARTO,MP

Rector
University of Pembangunan Nasional “Veteran” Jawa Timur
Surabaya, Indonesia

Assalamualaikum Wr. Wb.
Our Distinguished Guests, Speakers, and Participants of the seminar.

Thank God for granting us with blessings, so we could gather here today in this very special moment, BALI INTERNATIONAL SEMINAR ON SCIENCE AND TECHNOLOGY (BISSTECH) 2015. On behalf of University of Pembangunan Nasional “Veteran” Jawa Timur, please let me extend my warmest greetings and welcome our distinguished guests. I would also like to express my appreciation to each of you for attending this International Seminar, especially all of you who come from overseas.

Ladies and Gentlemen,
These last few years, the Indonesian government continues to improve research activities in the field of food, chemical, machinery, electrical engineering, civil, management, and information in order to optimize the resources available. Therefore, I really appreciate the topic of the seminar: "TOWARDS THE FUNDAMENTAL AND APPLIED RESEARCH FOR SOCIO-ENVIRONMENTALLY SAFE INDUSTRIAL DEVELOPMENT" aiming to communicate the results of research conducted by Industries, Research Institutes, Universities and Governments, both domestic and abroad based on national natural resources.

In this concern, UPN “Veteran” Jawa Timur is very pleased to join hands with Bali State Polytechnic, and National Cheng Kung University - Taiwan in holding the seminar since these institutions are on the same page in developing science and technology. It is gratifying to note that the agenda of the seminar covering a wide range of very interesting items relating to the topic. We believe this seminar is a great opportunity for all delegates to discuss the existing problems and find solution concerning the science and technology.

Distinguished guests, Ladies and Gentlemen,
Furthermore, may I congratulate the organizing committee for making this seminar possible. I wish this moment could not only enrich a broader knowledge, but also make new friends, and build networking in creating a better future. Hopefully all of you are having very pleasant stay in Indonesia, especially in Bali, and if it is possible please make a visit to our campus in Surabaya, the second biggest city in Indonesia, which is only 40 minutes from Bali. I apologize for all the inconveniences you may experience during the session. Good Luck!

Wassalamualaikum Wr. Wb.
Prof. Dr. Ir. H. Teguh Soedarto, MP



Ir. MADE MUDHINA, MT

Director of Bali State Polytechnic
Indonesia

The honorable;

1. Minister of Research, Technology and Higher Education
2. Governor of Bali
3. Keynote speakers
4. Presenters and participants
5. Rector and staff of Universitas Pembangunan Nasional Veteran East Java
6. Deputy directors and head of departments of Bali State Polytechnic
7. Distinguished guests, ladies and gentlemen.....

Om Swastyastu,

First of all, let us express our great gratitude to Ida Sang Hyang Widhi Wasa, The Almighty God for His blessing today, so that we can do this International Seminar.

The honorable minister, governor, ladies and gentlemen,

As we have already known that the development and economic growth of a country is strongly influenced by some economic factors such as natural resource, human resource, capital, and managerial asset who can organize and manage the production factors. These factors should be supported by the advance of technology, as the result, some experts believe that the advance of technology plays a very important and significant role to determine the development and economic growth of that country since it tries to combine the production factors in realizing production objectives.

In general, the technology in developing countries is still left behind compared to the developed countries. It has a tendency that the gap among those countries is getting wider and in consequence it will influence the development of economy of those countries. The developing countries need different sort of technology that it is in the developed countries. If a developing country tries and uses the technology in developed countries, neglecting the existence of local culture, this may bring any problems for those developing countries due to the reason that it is neither effective nor efficient. The developing country, like Indonesia, for example, is really appropriate to apply something we call it “adaptive technology”. It is a kind of technology which comes from research and development, adapted by some social considerations in order to be able to solve any real problems exist. The main indicators for the adapting process in developing technology in Indonesia should be in accordance with the consideration to employ some labor forces, use domestic material in order to add our national income.

Simple technology is strongly effective to be applied in Indonesia in order to be able to solve any problems without creating any other new and complicated problems. It is because simple technology is much easier to be understood and applied, and especially for those who are in the low culture of technology. Meanwhile, the development of mass technology which can employ big numbers of employees should be regularly continued and developed.

In relation to the development of technology, it cannot be separated from basic and applied science. Basic science will try to discover more about nature and its surrounding, then the applied one, as it is developed by Bali State Polytechnic, will try to solve any practical problems as well as to handle any problems faced by the human being itself. The collaboration between basic and applied science will finally produce any technology that can ease human to solve problems and obstacles. That is why, it is really appropriate to name this international seminar as “BISSTECH”-Bali International Seminar on Science and Technology. It can be clearly seen that science and technology will collaborate. It is a brilliant thought which will finally some media in order to help human to reach a better quality of life which will not destroy out nature.

Distinguished guests, ladies and gentlemen,

Bali State Polytechnic, as a vocational higher education, has a very strong commitment to run Three Basic Principles of Higher Education (Tri Dharma Perguruan Tinggi) by utilizing science and technology (IPTEK) in order to give direct impact to the economy of society. That is why; Bali State Polytechnic has a strong willing to cooperate with UPN Veteran, Surabaya, East Java to run this international seminar with the theme “TOWARDS FUNDAMENTAL AND APPLIED RESEARCH FOR SOCIO-ENVIRONMENTALLY SAFE INDUSTRIAL DEVELOPMENT BASED ON ENGINEERING AND TECHNOLOGY”. This seminar aims at facilitating researchers to exchange their ideas and thoughts as well as to build any network among them in this country, which later on trying to find any right solution of our nation’ problems through the development of technology that you have done in your research.

At last, on the behalf of the committee, I would like to extend my special thank to Minister of Research, Technology and Higher Education, Governor of Bali, for your excellent support to this seminar. Furthermore, I also would like to thank to keynote speakers, presenters, and all participants for your contribution in this prestigious international seminar. The last but not least, we would like to thank to UPN Veteran East Java which has cooperated with Bali State Polytechnic to run this international seminar.

Finally, I wish you a very good luck and all the best for the seminar. I do hope this seminar will give us any positive contribution. Thank you

Om Shanti, Shanti, Shanti, Om