

8th Widyatama International Seminar on Sustainability (WISS)

Addressing Global Sustainability Challenges in Business and Industry through Technology, Governance and Culture

Call for Papers

Papers on the following topics are welcome:

- Knowledge Management
- Sustainable Development & Environmental Protection
- Sustainable Reporting and Accounting
- Technology Strategy and Management
- Supply Chain Management & Logistics
- Local Culture/Wisdom in Sustainable Development
- Risk Management
- Project Management
- E-Business and E-Commerce
- Smart City
- Decision Support Systems
- Operations Research
- Innovation Policy and Management
- Healthcare Systems and Management
- Ergonomics & Safety
- Technology Intelligence and Planning
- Entrepreneurship
- R&D Management
- New Product Development
- Good Corporate Governance
- Process Innovation
- Intellectual Property Management
- Human Capital for Innovation
- Service Innovation and Management
- Disaster Management
- Quality Management and Innovation
- Design Thinking and Management
- Innovation and IT

CONTENTS

Steering Committee	3
International Reviewers	4
Organizing Committee	5
Rector's Welcoming Speech	6
Chair Welcoming Speech	7
Keynote Speaker	8
Invited Speakers	8
Program Overview	10
Parallel Session	11
Abstract	17
Author Index	48
Conference and Workshop Venue	50
Cultural Tour	53

STEERING COMMITTEE

Dr. H. Islahuzzaman, SE., M.Si., Ak., CA. (Widyatama University, Indonesia)

Asooc. Prof. Chai Kah Hin (National University of Singapore, Singapore)

Prof. Dr. Ir. Kadarsah Suryadi (Bandung Institute of Technology, Indonesia)

Dr. H. Nuryaman, SE., M.Si., Ak, CA. (Widyatama University, Indonesia)

Sri Astuti Pratminingsih, S.E., MA., Ph.D. (Widyatama University, Indonesia)

Nugroho Juli Setiadi, Ph.D. (Widyatama University, Indonesia)

Prof. Dr. H. Obsatar Sinaga, M.Si. (Widyatama University, Indonesia)

International Reviewers

1. Prof. Dr. Baris Tan (Koc University, Turkey)
2. Prof. Dr. Bin Jiang (DePaul University, USA)
3. Prof. Dr. Chihiro Watanabe (Tokyo Institute of Technology, Japan)
4. Prof. Dr. dr. H. Nanan Sekarwana, Sp.A(K), MARS. (Padjadjaran University, Indonesia)
5. Prof. Dr. Eng. Rolly Intan (PETRA University)
6. Prof. Dr. Hamfri Djajadikerta, MM., Ak. (Parahyangan University, Indonesia)
7. Prof. Dr. Hang Chang Cieh (National University of Singapore)
8. Prof. Dr. Latifah Abdul Latif (Open University Malaysia)
9. Prof. Dr. Mansor Fadzil (Open University Malaysia)
10. Prof. Dr. Metin Turkey (Koc University, Turkey)
11. Prof. Dr. Mustofa Kamil, M.Ed. (Indonesia Education University, Indonesia)
12. Prof. Dr. Pekka Leviakangas (Oulu University, Finland)
13. Prof. Dr. Stephanie Short (The University of Sydney, Australia)
14. Prof. Dr. Suhono H. Supangkat (Bandung Institute of Technology)
15. Prof. Dr. Togar M. Simatupang (Bandung Institute of Technology)
16. Budi Hartono, ST., MPM., Ph.D. (Gadjah Mada University, Indonesia)
17. Catharina B. Nawangpalupi, Ph.D. (Parahyangan University, Indonesia)
18. Dr. Dayu Jin (National University of Singapore)
19. Dr. Diana Sari, S.E., M.Si., Ak., C.A. QIA (Widyatama University, Indonesia)
20. Dr. Dida Dyah Damayanti, M.Sc.Eng. (Telkom University, Indonesia)
21. Dr. dr. H. Yono Sudiyono, MH.Kes., MARS. (Unisba, Indonesia)
22. Dr. Evelyn Guat Lin Tan (Universiti Sains Malaysia)
23. Dr. Fauzan Zein Muttaqien, S.Si., M.Si., Apt. (Sekolah Tinggi Farmasi Bandung, Indonesia)
24. Dr. Ferry Jie (RMIT University, Australia)
25. Dr. Gunjan Mansingh (University of West Indies, Jamaica)
26. Dr. Hero Gunawan, M.Pd. (Widyatama University, Indonesia)
27. Dr. Ihsana Sabriana, S.Psi., M.Psi. (Unisba, Indonesia)
28. Dr. Ir. Hj. Dyah Kusumastuti, M.Sc. (Widyatama University, Indonesia)
29. Dr. Ir. Yogi Yogaswara, MT. (Pasundan University, Indonesia)
30. Dr. Maya Ariyanti, SE., MM. (Telkom University, Indonesia)
31. Dr. Nuryaman, S.E., M.Si., Ak. (Widyatama University, Indonesia)
32. Dr. Rajesri Govindaraju (Bandung Institute of Technology, Indonesia)
33. Dr. Rufei Ma (Zhejiang University, China)
34. Dr. Singgih Saptadi, ST., MT. (Diponegoro University, Indonesia)
35. Dr. T.M.A. Ari Samadhi (Bandung Institute of Technology, Indonesia)
36. Dr. Tanika D. Sofianti (Swiss German University)
37. Dr. Tita E. Branzuela (San Beda College, Philippines)
38. Dr. Yuni Trihewindati (Universitas Terbuka, Indonesia)
39. Dr. Zhao Yang Yang (Norwegian Institute for Systems Engineering, Norway)
40. Dr. Zulganef, Drs., M.M. (Widyatama University, Indonesia)
41. Markus Hartono, ST., M.Sc., Ph.D. (University of Surabaya, Indonesia)
42. Saut A. Sagala, ST., M.Sc., Ph.D. (Bandung Institute of Technology, Indonesia)
43. Setiadi Yazid, Ph.D. (Widyatama University, Indonesia)
44. Sri Astuti, Ph.D. (Widyatama University, Indonesia)
45. Sunardi Brahmana, SE., M.T., Ph.D. (Widyatama University, Indonesia)
46. Yudha Prambudia, ST., M.Sc., Ph.D. (Widyatama University, Indonesia)
47. Dr. Oktri M. Firdaus, M.T. (Widyatama University, Indonesia)
48. Dr. Arief Rahmana, M.T. (Widyatama University, Indonesia)

Organizing Committee

Chair

Dr. Oktri Mohammad Firdaus, ST., MT.

Secretary

Nissa Syifa Puspani, ST., MT.

Annisa Maharani Suyono, ST.

Karismawaty Shintia Dewi, ST.

Email Address Collection

Andina Nur Fathonah, SE., M.Ak., Ak.

Muhammad Bayu A. Sumantri, S.Mb., M.Com.

Finance and Registration

Retno Paryati, SE., M.Ak., Ak., CA.

SCOPUS Indexing and Journal List

Yudha Prambudia, ST., M.Sc., Ph.D.

Dr. Hero Gunawan, M.Pd.

Didit Damur Rochman, ST., MT.

Iqbal Yulizar, S.Si., MT.

ISSN Registration

Dr. Arief Rahmana, ST., MT.

Program Book and Proceedings (CD & Hardcopy)

Niki Hadian, S.E., MM., Ak., CA.

Suharyono, S.T., M.M.

Tiaradia Ihsan, ST.

Website and Information Technology

Dani Hamdani, S.Kom., MT.

Eka Angga Laksana, S.Kom., MCS.

EasyChair Systems

Viddi Mardiansyah, S.Si., MT.

Ni Putu Nurwita Pratami, S.MB., MM.

Promotion and Information Distribution

Kartika Wulandari, SE., MM.

Seminar Kit & Promotion Media Design

Muchammad Fauzi, ST.

Hospitality Management, Sponsorship & Event Organizer

Mirna Dianita, SE., MM., Ak., CA.

Rosalin Samihardjo, ST., M.Kom.

Agung Augustrianto, SE., MBA.

Intan Widuri Sakti, ST., MM.

Bunga Indah Bayunitri, SE., MM., Ak



Rector's Welcoming Speech

Assalamu'alaikum Warrahmatullahi Wabarakatuh

Welcome to Bandung and to 2016 WISS,

Ladies and Gentlemen, It gives me great pleasure and honor to extend to you all a very warm welcome on behalf of Widyatama University to WISS 2016 in Bandung, Indonesia.

The 2016 WISS International Seminar is celebrating its eighth commencement and Widyatama University has placed the biennial event as a crucial element in its agenda: It is the manifestations of its engagement in the development of knowledge in science and technology and molding high quality human capital, and competitive at the global level.

This year's WISS theme is "Addressing Global Sustainability Challenges in Business and Industry through Technology, Governance and Culture". It voices the concerns of the academic community at Widyatama University on the continuity and sustainability of our future. Moreover, it is the longing that the spirit of "Go Green" heralded by parties with interests in common good then be realized in the advent of well-thought collaboration and coordination from all stakeholders.

The integration of technology, transparent agenda of the stake holders, and the survival of a nation's culture has become a key asset for a better tomorrow. The three components, when comprehensively put into a concurrence, will create people with high level of sophistication: intelligence, high integrity, respect and honor in the values of their culture. Thus, we adamantly believe that through sharing of experiences in gatherings such as this conference we will be able to redefine our approach and efforts for the protection and sustainable management of our business without forgetting our future generation.

It is my hope that WISS 2016 could provide positive benefits for all of us in maintaining sustainability of our future. And to foster the spirit of sustainable innovation for individuals, businesses and communities, so that we can build a sustainable environment together.

I would also take this opportunity to convey my appreciation and gratitude to all parties who are involved in organizing this conference : Widyatama Foundation, IEEE Indonesia Section, Bank Mandiri, the Ministry of Tourism and Creative Economy, scientific committee, organizing committee and many others I am unable to individually mention. The conference will not be possible to be organized without your supports and cooperation.

Once again, welcome and enjoy the conference. I wish you a fruitful conference ahead.

Billahi Taufik Walhidayah. Wassalamu'alaikum Warrahmatullahi Wabarakatuh.

Your sincerely,

Dr. H. Islahuzzaman, SE., M.Si., Ak., CA.
Rector of Widyatama University



Chair Welcoming Speech

Welcome to the 8th Widyatama International Seminar on Sustainability (WISS) 2016. It is a great pleasure for Faculty of Engineering, Widyatama University to be hosting this biannual event. WISS 2016 is a right event to declare that Widyatama University concerns about increasing quality of research especially from all Indonesian researcher. It is a great pleasure that WISS 2016 have experienced to held Pre-Seminar Workshop with 4 (four) different topics are ERP Implementation on Healthcare, LEAN in Services Company, Supply Chain Strategy in Emerging Countries and How to be a Good Book Writer, and also WISS 2016 in conjunction with Center for Sustainable Systems (CSS) Widyatama University held Sustainable Energy Panel, as a forum to share experience and engaging community for sustainable development in all emerging countries.

The main purpose of the 8th Widyatama International Seminar on Sustainability (WISS) 2016 with our selected theme “Addressing Global Sustainability Challenges in Business and Industry through Technology, Governance and Culture”, is to provide an international community to discuss and solve the problem related with sustainability in the world.

This seminar will have 1 (one) keynote speaker, 4 (four) invited speakers, and has gathered more than 120 papers from more than 10 different countries all over the world. After very strictly review process we have acceptance rate of this seminar is 68,5%. It's means that Widyatama University keep growth to increase the quality of papers in all seminar, and hopefully in WISS 2020 we can reached the acceptance rate less than 40%.

I would like to say thank you for all speakers, contributors, and participants for the generous support. I would also like to thank all members of Steering Committee and Organizing Committee of WISS 2016, and our distinguished international board of reviewers for all of their support and advice. Our thank you to all of our sponsors, supporters, exhibitors, and professional associations for the support through committed funding and any other form of help and support. We also owe our success to the full support of the Chairperson of Widyatama Foundation, Rector of Widyatama University, and all Deans of Widyatama University. Thank you to IEEE Indonesia Section that has supported WISS 2016 to be approved as IEEE Conference.

We wish you a pleasant and memorable stay in Bandung. Thank you and we hope to see you again in the WISS 2018.

Dr. Oktri Mohammad Firdaus, M.T.

Chairman of WISS 2016

KEYNOTE SPEAKER



Dr. Ir. Arief Yahya, M.Sc.

Dr. Ir. Arief Yahya, M.Sc. is the current Minister of Tourism of Indonesia in the working cabinet of President Joko Widodo. From 2012 till his appointment to be a minister, he served as CEO in Telkom Indonesia, telecommunication state-owned enterprises in Indonesia.

INVITED SPEAKERS



Prof. Dr. Ir. Kadarsah Suryadi, DEA

Prof. Dr. Ir. Kadarsah Suryadi, DEA is Rector of Bandung Institute of Technology for the period 2015-2020.

Prof. Kadarsah Suryadi is a Professor in the Faculty of Industrial Technology, Bandung Institute of Technology, Indonesia. He received a Doctoral Degree from the University of Aix Marseille III, France in 1992. He has been involved in multiple disciplinary research in the areas of decision support system and knowledge management



Prof. Dr. Nirwan Idrus

Nirwan graduated from Monash University in Melbourne, Australia with the Bachelor of Engineering (Honors), Master of Engineering Science and Doctor of Philosophy in Engineering. He had worked in senior positions in academia, government, heavy industry and management in Australia, New Zealand, Papua New Guinea, Indonesia and Malaysia. He also had been appointed as Quality Assurance Specialist in an Asian Development Bank project on engineering education development in Indonesia and by The World Bank as Accreditation Auditor of Timor Leste's universities. He was also

an Auditor with the Australian Universities Quality Agency, New Zealand Qualifications Authority and Malaysian Qualifications Agency. He has written more than 150 international conference and journal papers and 3 books on Quality Improvement in Higher Education. He is a paper reviewer for a number of international journals. He is currently a consultant in Quality and Higher Education Management.



Mochamad Ridwan Kamil, S.T., M.UD.

Ridwan Kamil is the current Mayor of Bandung City, Indonesia. He is a famous Indonesian architect. He is also an educator in Bandung Institute of Technology (ITB) at Architecture Department, an urban designer and a writer. After receiving his master degree in Urban Planning from University of California at Berkeley in 2001, he worked in New York, San Francisco and Hong Kong. After several years, he went back to Indonesia and started to serve as a lecturer in ITB at Department of Architecture.



Professor Dr. Joy S. Clancy

Department of Governance and Technology for Sustainability,
University of Twente, The Netherlands

For 30 years, Prof. Joy's research has focused on small-scale energy systems for developing countries particularly the influence in households and small informal sector enterprise/companies (SME). Since obtaining her PhD in engineering, her research interest moved more towards social and environmental issues. In this context, Joy is also Principal Investigator for the Gender and Energy Research Programme of ENERGIA funded by the UKs Department for International Development.