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THE COMMITTEE MEMBER, PEER REVIEWERS, AND PREFACE OF THE 4th
INTERNATIONAL CONFERENCE OF INTEGRATED INTELLECTUAL COMMUNITY
(ICONIC)

4th International Conference of Integrated Intellectual Community (ICONIC)

July 25-26th, 2022
Aachen, Germany

Organized by:
PPI Germany 2022

Welcome From ICONIC 2022 Committee

It is our great pleasure to welcome the guests, participants, and keynote speakers in the International Conference of Integrated Intellectual Community (ICONIC) in Aachen, Germany on 25-26th of July 2022. ICONIC's theme for this year is "Enhancement of Triple Helix Collaboration to Accelerate Urban and Rural Sustainable Development". Collaboration between different areas of expertise and policy makers are essential as the world starts to recover from the covid pandemic. ICONIC is proud to be a pioneer in this honorable effort. We have received submissions from a range of scientific fields, which are categorized into three main subjects, namely Sustainable Infrastructure Development; Economic, Social and Welfare; and Precise and Efficient Technology.

All submissions are subject to blind review process. Only then are these submissions deemed eligible to be presented and qualify to the proceedings phase. We would like to express our utmost gratitude to all participants and stakeholders in organizing ICONIC 2022, especially our esteemed keynotes from Germany and Indonesia alike. We would also like to show our gratitude for the help of our Scientific and Steering Committee throughout the process. Lastly, we thank our reviewers and the whole Organizing Committee for their time and tireless efforts to ensure the success of ICONIC 2022. We believe ICONIC will be a significant steppingstone to further strengthen the relationship between Indonesia and Germany in the future.

Chairman of Organizing Committee ICONIC 2022

Diandra Akbar Arifki Siregar

Preface

PPI Germany holds a scientific conference every two years called the International Conference of Integrated Intellectual Community (ICONIC). This program provides opportunity for participants from Germany, Indonesia, and other nations to share their diverse views and perspectives. In this 4th ICONIC, The carried theme is Enhancement of Triple Helix Collaboration to Accelerate Urban and Rural Sustainable Development. With 3 major sub-themes, namely:

- Sustainable infrastructure development
- Economic, Social and Welfare
- Precise and efficient technology

The purpose of ICONIC 2022 is to provide a forum for the discussion of current scientific issues for participants from diverse backgrounds promoting their knowledge from many research fields, and to exchange innovative ideas between academics or scientists, professionals, and policymakers. This year, we have 14 Manuscripts from various authors, of which nine are published in this proceedings book and the others are being prepared for submission to our partner journals.

On this occasion, we supported a number of national journals with national and worldwide reputations with cholar and Sinta indexing. This year, we are collaborating with regional publishers on the proceedings. All of this is intended to increase the greatness of scholarly publications in Indonesia and provide a concrete evidence of diaspora participation in the development of the academic community in Indonesia.

Finally, we would like to express our gratitude to the contributors, speakers, journal partners, and all the resources that made this publication possible. This book will perhaps serve as a model for other conferences hosted by Indonesia's diaspora in order to contribute to the Indonesian development.

Head of scientific committee 2022

Yudha Pratesa

Background

The 4th ICONIC in 2021 is a biannual conference initiated among young and passionate academicians within the Indonesian Student Association in Germany, also called Perhimpunan Pelajar Indonesia (PPI) Jerman. This conference is dedicated as a forum for exchanging ideas, and knowledge in achieving the goal of presenting comprehensive and complete solutions to the problems that are being faced by society. In addition, ICONIC 2022 is a place to encourage knowledge exchange among academicians or scientists, professionals, and policymakers.

Explore deeper into topics that are sometimes eroded by the generalization of issues, the 4th ICONIC in 2022 this time tries to highlight the issue of development from an individual perspective of different social constructs sustainably, urban and rural. “Enhancement of Triple Helix Collaboration to Accelerate Urban and Rural Development” seems to be a great capture to raise the different characteristics of both sides.

As a form of unity, urban and rural areas are the forerunner to the growth of civilization as we know it today. Because of that, this issue has become the attention of the world government in the UN Sustainable Development Goals (SDGs) referring to the following points: (3) Good Health and Well-Being, (4) Quality Education, (7) Affordable and Clear Energy, (8) Decent Work and Economic Growth into consideration. The attention of the Indonesian government is also shown in the form of government priorities. This is reflected in President Joko Widodo's State of the Union speech in 2021 mandated that cross-sectoral and cross institutional cooperation, including between the central government and regional administrations down to the village level, are also undergoing consolidation. To support sustainable global development and Indonesian government programs, ICONIC 2022 dedicates it's time to important topics including:

1. Sustainable infrastructure development
2. Economic, social, and welfare
3. Precise and efficient technology

Therefore, through this international conference, it is hoped that exchange in information is ensured, which will add insight and maturity to scientific thinking for each participant. International conferences can also be a means of flourishing cooperation between academia from various fields. In ICONIC 2022, the participant has a chance to publish their manuscript in several ICONIC journal partners which is indexed by Google scholar, SINTA or SCOPUS.

Theme Breakdown

Infrastructure development has become the focus of the work of the government in recent years. Not only relying financially on the state budget (or APBN in Bahasa Indonesia), the involvement of the private sector is also actively encouraged as a part of the national development. Various financing schemes were also introduced, one of which was Public Private Partnership (PPP or KPBU in Bahasa Indonesia). All types of development are expected to improve the welfare of the people who pay attention to local wisdom and sustainability.

To complete the helix collaboration, ICONIC 2022 welcomes high-quality scientific papers that describe original and unpublished research papers addressing the real issues, methods, and challenges on the following areas of **“Enhancement of Triple Helix Collaboration to Accelerate Urban and Rural Sustainable Development”**. The theme is divided into several sub-themes, including:

1. Sustainable infrastructure development.

Some topic examples in this sub theme, but also not limited to:

- a. Climate change
- b. Renewable and energy system
- c. Sustainable housing
- d. Materials recycle
- e. Ecology
- f. Logistics and supply chain
- g. Digital infrastructure
- h. Land management and monitoring
- i. Planning and design

2. Economic, social and welfare.

Some topic examples in this sub-theme, but also not limited to:

- a. Rural banking
- b. Government support and policy
- c. Micro factory
- d. Technological literacy
- e. Circular economy
- f. Healthcare accessibility
- g. Healthcare facilities
- h. Disease prevention

- i. Medical manpower

3. Precise and efficient technology

Some topic examples in this sub-theme, but also not limited to:

- a. Sustainable agriculture and forestry technology
- b. Information technology
- c. Food technology
- d. Low emission transport technology
- e. Autonomous vehicles

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- All participants and others who have in one way or another contributed towards the success of this conference

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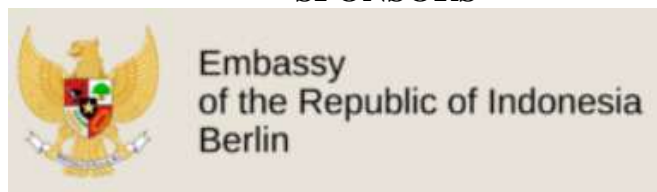


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