

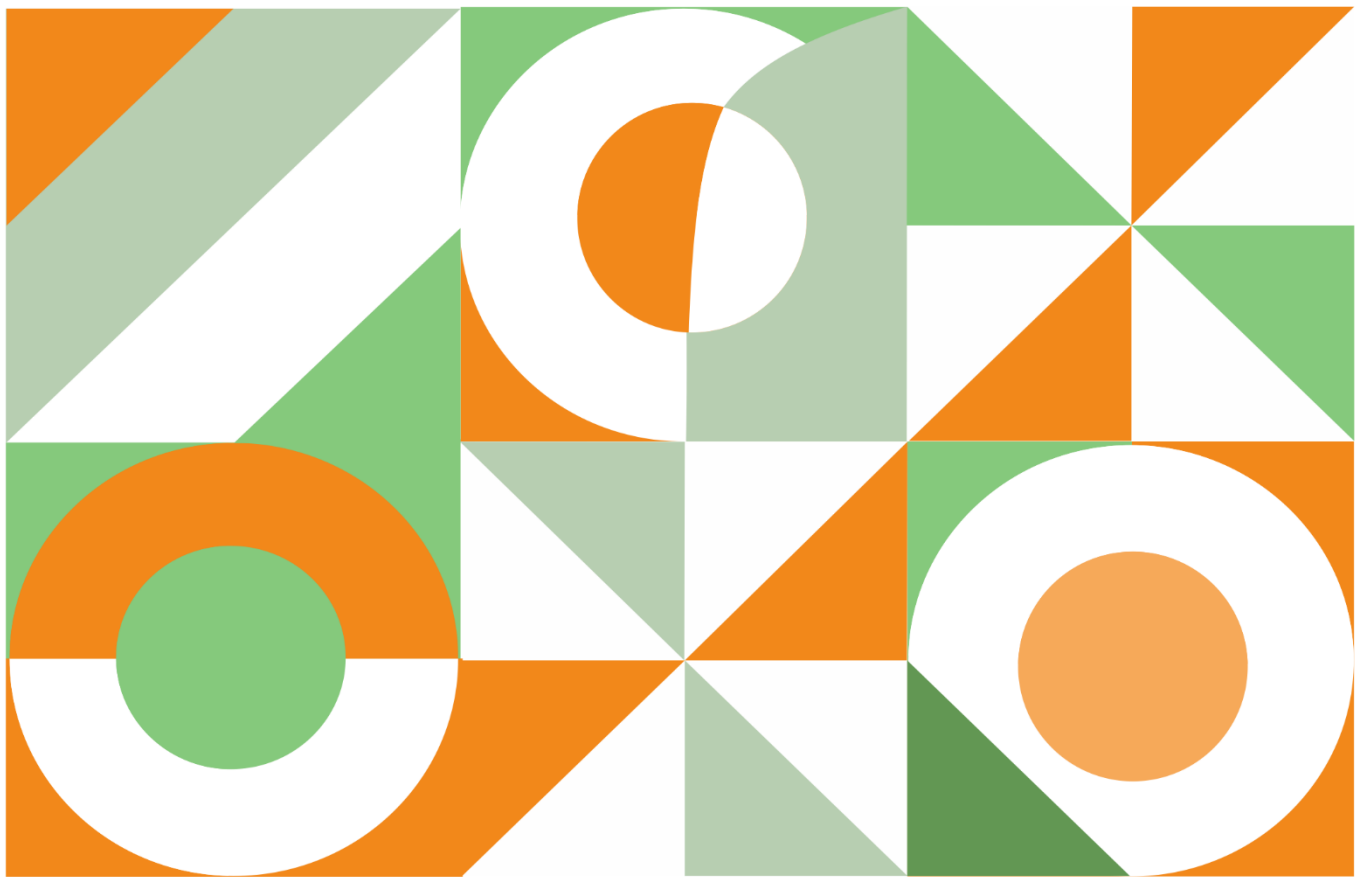


2019

# Book of Abstracts

10<sup>th</sup> International Conference on Green Technology 2019

Empowering the 4.0 Industrial Revolution Through  
Green Science and Technology



Malang, October 2<sup>nd</sup> - 3<sup>rd</sup>, 2019

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## PREFACE

### THE DEAN OF FACULTY OF SCIENCE AND TECHNOLOGY

### UNIVERSITAS ISLAM NEGERI MAULANA MALIK IBRAHIM MALANG

It is our pleasure to very warm welcome all participant to the 2019 10th International Conference on Green Technology (ICGT 2019) in Faculty of Science and Technology, Universitas Islam Negeri Maulana Malik Ibrahim Malang. The ICGT have started ten years ago and this year, the theme of the conference is “*Empowering the Fourth Industrial Revolution through Green Science and Technology*”. Now, we are entering the fourth industrial revolution which will influence all aspect in the civilization of humankind. Thus, we hope through this conference we can contribute by the result of green science and technology in Empowering the Fourth Industrial Revolution through Green Science and Technology. And also, we hope this conference can bring academic scientists, engineers, industry researchers together to discuss, exchange and share their experiences and research results about green technology.

We would like to thank:

1. Rector and Vice-Rector of Universitas Islam Negeri Maulana Malik Ibrahim for their assistance and support for 10th International Conference on Green Technology.
2. Academic board committee for work in abstract and paper review.
3. The event organizing committee for managing this conference.
4. All the keynote speaker who willingly attended this conference.
5. Special Thanks to IOP Conference Proceeding Series, Journal of Islamic Architecture, ALCHEMY Journal of Chemistry, NUTRINO Journal, CAUCHY, and MATICS.

We wish all participants of 10<sup>th</sup> ICGT an enjoyable scientific meeting in Malang, Indonesia. We look forward to seeing all of you next year at 11<sup>th</sup> ICGT

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ID ABSTRACT: ABS-123

## Preparation of ZSM-5 from Rice Husk Silica and Aluminum Foil Using Tetrapropylammonium Bromide (TPABr) as a Template

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Zeolite of the type ZSM-5 is an interesting material with various applications, one of them as a catalyst. In this research, ZSM-5 was prepared from rice husk silica and food-grade aluminum foil using tetrapropylammonium bromide (TPABr) as a template or structure-directing agent. The main purpose of the study is to investigate the effect of crystallization time on structure, microstructure, and the activity of zeolites as catalyst for rubber seed oil transesterification. The preparation of zeolites was conducted with hydrothermal process at fix temperature of 180°C with varied crystallization time of 24, 48, 72, 96, and 120 h. The samples were calcined at 600 °C for 6 h and then characterized using XRD and SEM technique. The XRD and SEM characterization confirmed that ZSM-5 was successfully produced from raw materials and preparation procedures applied. The zeolites also exhibited catalytic activity in transesterification to convert fatty acids in rubber seed oil into corresponding methyl esters.

**Keywords:** ZSM-5, rice husk silica, aluminum foil, catalyst, transesterification, rubber seed oil



# CERTIFICATE

NO: 2821/FST/PP/09/10/2019

This certificate is hereby awarded to:

**KAMISAH DELILAWATI PANDIANGAN**

Our sincerest gratitude for your contribution as

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during the conduct of

**INTERNATIONAL CONFERENCE ON GREEN TECHNOLOGY**

**"Empowering the 4.0 Industrial Revolution through Green Science and Technology"**

**Held on October 2<sup>th</sup> - 3<sup>rd</sup>, 2019 at Savana Hotel & Convention Malang, East Java, Indonesia**

**Chairperson**

  
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