GreenTech

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Book of Abstracts

10th International Conference on Green Technology 2019

Empowering the 4.0 Industrial Revolution Through Green Science and Technology

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ALCHEMY Journal of Chemistry

CAUCHY Jurnal Matematika Murni dan Aplikasi

JURNAL NEUTRINO Jurnal Fisika dan Aplikasinya

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

Dean of Faculty of Science and Technology
UIN Maulana Malik Ibrahim Malang

Dr. Sri Harini

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Biodiesel Preparation from Oil Fraction of Crude Pond Palm Oil through $SiO_2/SO_3^-H^+$-Catalyzed Esterification Followed by KOH-Catalyzed Transesterification

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In this study, silica extracted from sugarcane bagasse was sulfated by wet impregnation method using H_2SO_4 solution with variations in the concentration of 0, 0.5, 1, 1.5, and 2 M as the sulfating agent. The sulfated silica was subsequently subjected to calcination at 40 °C, and then tested as catalyst for esterification of crude pond palm oil using methanol. The experimental results revealed that the catalysts exhibit good catalytic performance, enabling the achievement of up to 85% reaction yields. Physical characteristics of the catalysts were investigated using different techniques, including Fourier infra-red (FTIR) spectroscopy, x-ray diffraction (XRD), scanning electron microscopy (SEM), and particle size analysis (PSA). These characterization techniques reveal that successful sulfation of the silica was achieved.

Keywords: sugarcane bagasse, silica, sulfated, crude pond palm oil