

**TITLE**

*SUSTAINABLE CONVERSION OF AGRICULTURAL BIOMASS AND ITS VALORIZATION INTO USEFUL PRODUCTS*

**WORKSHOP CHAIR/ (CO-CHAIR)**

Chair:

Assoc. Prof. Dr. Zainul Akmar Zakaria (Universiti Teknologi Malaysia, Malaysia)

Co-chair:

- 1) Dr. Rochim Bakti Cahyono (Universitas Gadjah Mada, Indonesia)
- 2) Prof. Dr. Mohd. Fadhil Md. Din (Universiti Teknologi Malaysia, Malaysia)
- 3) Assoc. Prof. Dr. Muhammad Abbas Ahmad Zaini (Universiti Teknologi Malaysia, Malaysia)

**OBJECTIVE**

Upon completion of this workshop, all participants are expected to:

- 1) Understand and be able to evaluate the potential valorization of agricultural biomass for various useful applications
- 2) Appreciate the importance of proper management of agricultural biomass and its impact to Sustainable Development Goals (SDGs)

**SCOPE**

Scope of the workshop are proposed as follows:

- 1) Speakers to include latest advancement in area of study with the addition of Case Study (based on speaker's own experience)
- 2) Agricultural biomass discussed would include biomass obtained from tropical and Asian region
- 3) None of the techniques presented involved the use of toxic chemicals or harmful processes that may endanger human operator as well as reducing environmental quality

**EXPECTED PARTICIPANTS (& NUMBER)**

Participants for this workshop are expected from paid participants for SEATUC2023.

Entry level:

Beginner to intermediate (postgraduate students to early career researchers)

No. of participants expected:

to be determined by SEATUC organizer

## PROGRAM OUTLINE (including time schedule)

### Moderator:

Assoc. Prof. Dr. Zainul Akmar Zakaria (Universiti Teknologi Malaysia, Malaysia)

### Facilitator:

- 1) Dr. Rochim Bakti Cahyono (Universitas Gadjah Mada, Indonesia)
- 2) Prof. Dr. Mohd. Fadhil Md. Din (Universiti Teknologi Malaysia, Malaysia)
- 3) Assoc. Prof. Dr. Muhammad Abbas Ahmad Zaini (Universiti Teknologi Malaysia, Malaysia)

### Task for workshop:

- 1) facilitator - present own topics for 15mins each (4 topics = total 60mins)
- 2) participants divided into 4 groups - 1 group/ topic
- 3) participants are given 30mins to complete the following:
  - identify 1 example of agricultural biomass
  - choose techniques for valorization and justify the selection (valorization steps shall involve pre-treatment, conversion technique, downstream processes)
  - discuss potential applications (section, targeted group, etc)
  - prepare presentation materials in the form of Powerpoint slide
- 4) all groups to make a presentation of 15mins each

No.	Time	Title	Speaker/ Facilitator
1	9.00 – 9.05am	Introduction of Workshop	Assoc. Prof. Dr. Zainul Akmar Zakaria (UTM, Malaysia)
2	9.05 – 9.20am	Topic 1: Impact of sustainable management of agricultural biomass in supporting the achievement of SDGs	Prof. Dr. Mohd. Fadhil Md. Din (UTM, Malaysia)
3	9.20 – 9.35am	Topic 2: Thermogravimetric analysis and kinetic studies of agricultural biomass as catalyst	Dr. Rochim Chayono (UGM, Indonesia)
4	9.35 – 9.50am	Topic 3: Acid condensate from palm kernel shell and palm mesocarp fibre for biomedical applications	Assoc. Prof. Dr. Zainul Akmar Zakaria (UTM, Malaysia)
5	9.55 – 10.10am	Topic 4: Synthesis and characterization of activated carbon from various types of agricultural biomass	Assoc. Prof. Dr. Muhammad Abbas Ahmad Zaini (UTM, Malaysia)
6	10.10 – 10.40am	Discussion and preparation of materials by workshop participants	All speakers/ facilitators
7	10.40 – 11.40am	Presentation of materials by workshop participants	All speakers/ facilitators
8	11.40 – 11.50am	Reflection and Conclusion	Participants and speakers/ facilitators