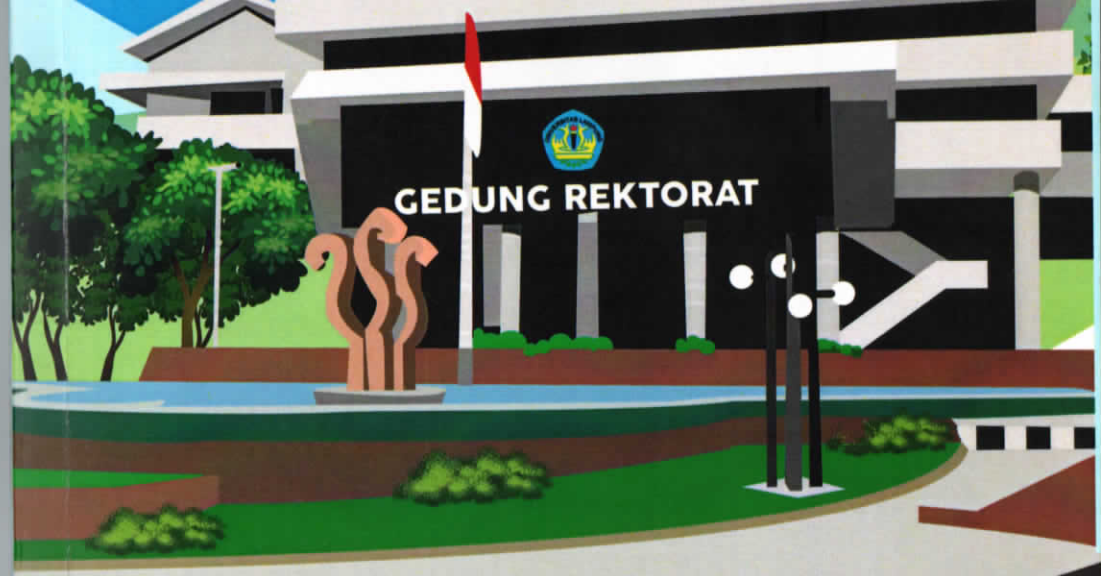
PROGRAM BOOK

The 2nd International Conference on Applied Sciences, Mathematics and Informatics



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adsorption capacity of leaves powder towards dyes in aqueous solution was represented by using methylene blue as target pollutant. The adsorption kinetics was measured by using pseudo first and pseudo second order model while the adsorption isotherm was calculated by using Langmuir and Freundlich model. Different pH was used to observe the ability of cassava leaves to adsorb methylene blue from water based on acidity condition. The experimental results revealed that the adsorption kinetics followed the pseudo second order model with R valued was 0.999 and 1 for before and after activated, respectively. The characterization of both materials was conducted by using scanning electron microscopy (SEM) to observe the pore changes before and after modification.

Keyword : adsorption; methylene blue; cassava leaves

8. **LaCrO3 nanophotocatalyst: The effect of calcination temperature on its activity to cellulose conversion under UV-ray Irradiation**

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Abstract. LaCrO3 nano photocatalyst had been prepared using sol-gel and freeze-drying method. Preparation of material was carried out by dissolving nitrate salts of lanthanum and chrome in pectin solution, respectively and then it was mixed together and stirred thoroughly using magnetic stirrer while adjusting pH to 11 until the gel formed. After the freeze-drying process, the precursors were subjected directly to the calcination treatment at 600, 700, and 800 oC, respectively. Then, the samples were subsequently characterized using the techniques of X-ray diffraction (XRD), DRS and TEM. The result of the cellulose conversion is followed by DNS and HPLC analysis. The results proved that LaCrO3 crystalline phase is formed and its grain size is around 30 nm. DRS analysis also proved that band gap energy is affected by temperature calcination, its value is around 2.9 eV. Its activity test said that the calcination temperature affected the conversion of cellulose. The cellulose conversion is more than 20% with the yield of sorbitol 10% in 40 - 60 minutes reaction.

Keyword : nano; cellulose; sol-gel; sorbitol

9. **Characteristics and Catalytic Activity of Zeolite-A Synthesized from Rice Husk Silica and Aluminium Metal by Sol-Gel Method**

Kamisah Pandiangan; Wasinton Simanjuntak; Mita Rilyanti

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Abstract. In this research, sol-gel process was applied to synthesize zeolite-A from rice husk silica and aluminum metal. For preparation of the zeolite, the specified amount of rice husk silica and aluminum metal was separately dissolved in NaOH solution, and both solutions were transfered in to a laboratory mixture for complete mixing and production of gel. The gel was converted into solid zeolite precursor by oven drying of the gel for 24 hours. The precursor was transformed into zeolite by subjecting to different calcination temperatures, and then characterized using different techniques. The zeolites were also tested as catalyst for transesterification of Ricinius communis oil. Development of structure of the zeolite was confirmed using FTIR and XRD techniques analyses, while SEM analysis revealed the characteristic of the samples as porous and multiphasic materials. The zeolites were found to exhibit good catalytic activity as revealed by the results of transesterification of Ricinius communis oil. Appreciable catalytic activities were also demonstrated by the reaction yields achieved which are in the range of 68 to 82%.

Keyword : zeolite-A; rice husk silica; transesterification; Ricinius communis

10. **Cultivation of Nannochloropsis sp in The Media from Effluent Biogas of Tapioca Industrial and Determination of its Protein Content**

Ni Luh Gede Ratna Juliasih; Sri Utami; Andi Setiawan

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Abstract. The cultivation of Nannochloropsis sp. in the media from effluent biogas of tapioca industrial (MEBIT) and determination of its protein content has been done. This research included the isolation of Nannochloropsis sp. from marine biota symbiosis with mangrove roots obtained from The Dewi Mandapa coastal, Pesawaran, Lampung and adaptation the inoculum Nannochloropsis sp. in the media MEBIT 1, 3, and 6% enriched with a solution of urea, ZA and TSP. The growth of Nannochloropsis sp. was evaluated based on cell density (OD = Optical Density at 750 nm, the concentration of chlorophyll a and biomass yields, which is compared to the growth in BG 11 media. The results showed that 6% (v/v) MEBIT is appropriate for the growth of Nannochloropsis sp. The biomass concentration of Nannochloropsis sp. in MEBIT is 0.31 g/L with a productivity of 0,019 g L^{-1} d^{-1} while the media biomass BG 11 gained 0.25 g/L with a productivity of 0,016 g L^{-1} d^{-1}. The protein content of Nannochloropsis sp. growth in MEBIT obtained 30.64% and 36.41% in BG 11 media, of the dry biomass. The verification method for the protein determination used in this

CERTIFICATE

The organizing committee certifies that

Kamisah D Pandiangan

has contributed as

PRESENTER

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Prof. Warsito, S.Si., DEA., Ph.D.
Dean

Dr. Junaidi, S.Si., M.Sc.
Chairman

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PELINDO II