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I. Istadi (Editor-in-Chief)

Department of Chemical Engineering, Diponegoro University, E-mail: istadi@che.undip.ac.id

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This issue (Bull. Chem. React. Catal. Eng., Volume 12, Issue 1, Year 2017 (April) has published 16 original research articles. This issue was authored and co-authored by 63 authors from 9 countries (Indonesia, Malaysia, Iran, China, India, South Africa, Saudi Arabia, Brunei Darussalam, and Pakistan). This issue has available online since 13 February 2017 for the regular issue of April 2017.

In this issue, there were three articles concerned on nanomaterials or nanocatalysts. The first article was focused on electrosynthesized Ni-Al layered double hydroxide-Pt nanoparticles as an inorganic nanocomposite and potentate anodic material for methanol electrooxidation in alkaline media by Habibi & Ghaderi. They found that the PtNPs/Ni-Al LDH/GCE exhibited higher electrocatalytic activity than PtNPs/GCE and Ni-Al LDH/GCE. The second article focused on the nanomaterial was published by Hosseini & Saeedi that was photocatalytic degradation of methyl orange on Bi₂O₃ and Ag₂O-Bi₂O₃ nano-photocatalysts. Incorporation of Ag₂O in the structure of composite caused decreasing band gap and its response to visible light. Because a high percentage of sunlight is visible light, hence the Ag₂O-Bi₂O₃ nano-composite could be used as an efficient visible light driven photocatalyst for degradation of dye effluents by sunlight. Another nanocatalyst was studied by Ahmad *et al.* concerning synthesis and characterization of pure and nano-Ag impregnated chitosan beads and determination of catalytic activities of nano-Ag. They found that the nano-Ag as a reliable and active catalyst which made NaBH₄ quite capable for the nitro reduction. Moreover, the catalytic activities of crosslinked chitosan substrate were found more reproducible as compared to the uncrosslinked substrate.

Other articles focused on the catalytic soot elimination environmentally were published by Kobayashi & Hikosaka as well as Dhal *et al*. The former researcher group studied analyzing loose contact oxidation of diesel engine soot and Ag/CeO₂ catalyst using nonlinear regression analysis (Kobayashi & Hikosaka). They found that the loose contact activity was depended on the condition of the carbon black particles, such as the bulkiness and physical contact with catalyst, and these can change depending on the mixing time used in the preparation procedure, with a long mixing time giving a result that approached the catalytic activity of the tight contact sample. Meanwhile, the later group investigated simultaneous elimination of soot and NOX through silver-barium based catalytic materials (Dhal *et al.*). They found that the catalysts were active in soot combustion with an indicative decrease of oxidation onset temperature compared to uncatalyzed soot oxidation. It has also been found that the Ag-based samples were able to simultaneously remove soot and NOX. In particular, the Ba-containing systems exhibited higher NOX storage capacity than Sr-catalyst. An adverse effect of soot on the NOX storage activity has been also observed.

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There are three articles which focused on the novel catalyst for fuel processing. The first article was focused on the preparation of biofuel from palm oil catalyzed by ammonium molybdate in homogeneous phase investigated by Sadighi & Targhi. They suggested that the activity test confirms that the bio-naphtha produced from the proposed method has a few aromatic components, and its sulfur content was negligible. The cetane index reached 66.3 and suitable fuel for diesel engines vehicles. Another group, Luchters *et al.*, studied the variability of data in high throughput experimentation for catalyst studies in fuel processing. They found that the ICP analysis indicated that loadings of both Pt and Rh were performed accurately through incipient wetness impregnation using the synthesis robot. In addition, CO chemisorption experiments of the Pt catalysts suggest equal active metal distribution on the alumina support. The reproducibility of the WGS and SMR reaction were assessed with both one-to-many and many-to-many experiments.

Other studies were focused on catalytic reduction process (Makama et al., Faten et al., and Cai et al.). Makama and coworkers suggested photo-catalytic reduction of aqueous Cr(VI) with CdS under visible light irradiation. They found that the nanoparticle size has a dramatic effect on the adsorption and reduction of Cr(VI). The results evidenced the inverse relationship between the apparent reduction rate constant and the CdS particle size. Another article, Faten and co-workers investigated characterization and application of aluminum dross as catalyst in pyrolysis of waste cooking oil. They suggested that an efficient catalyst derived from industrial solid waste was modified by acid washing for using in a pyrolysis of waste cooking oil. The modification of aluminum dross resulted in increased surface area, acidity, and thermal stability. Cai and coworkers suggested one-pot synthesis of Bi/Fe_3O_4 and its catalytic performances for 4-nitrophenol reduction. They found that the Bi/Fe_3O_4 composite was the bismuth particles were well dispersed. The catalyst has higher activity when Bi/Fe molar ratio is 1:4 in the composite and the rate constant k is about 0.611 min⁻¹. The catalyst has good reusability which can be used 10 cycles without obvious deactivation. Furthermore, the catalyst can be easily separated by an external magnetic field.

Various novel catalysts were also found by some researchers. Pawar and co-workers studied modification, characterization, and catalytic application of mesolite for one pot synthesis of 3-methyl-4-arylmethylene-isoxazol-5(4H)-ones. They concluded that modified dealuminated mesolite showed an efficient catalytic activity for the synthesis, via one pot three components condensation of benzaldehyde, ethylacetoacetate and hydroxylamine hydrochloride. The present method offered several advantages over the reported methods like a simple and inexpensive modification of catalyst, mild reaction condition, easy separation of catalyst, simple work-up procedure, nonchromatographic isolation and purification desired product and excellent yield. Janaun and coworkers investigated preparation and characterization of sugar based catalyst on various supports. They suggested that among the catalysts, the sulfonated carbon-base catalysts that were attached on the ceramic support exhibited the highest acidity followed by the catalyst deposited on the glass and aluminum supports. The porous structure of a ceramic surface, allowed a better interaction between reactants and -SO₃H site in the carbon. Nurhadi focused on modification of coal char-loaded TiO2 by sulfonation and alkylsilylation to enhance catalytic activity in styrene oxidation with hydrogen peroxide as an oxidant. He found that the alkyl silylation could enhance the catalytic activity of Ti-SO₃H/CC-600(2.0). High catalytic activity and reusability of the o-Ti-SO₃H/CC-600(2.0) were related to the modification of local environment of titanium active sites and the enhancement the hydrophobicity of catalyst particle by alkyl silylation. Another one is Li-Hua and coworkers which focused on synthesis, structural characterization and catalytic activity of a Cu(II) coordination polymer constructed from 1,4-phenylenediacetic acid and 2,2'-bipyridine. They found that the Cu(II) complex catalyst has good catalytic activity with a maximum yield of 54.3% and stability due to each Cu(II) atom adopts sixcoordination and forms a distorted octahedral configuration.

An article focusing the novel reactor design was published by Nur and coworkers concerning an evaluation of novel integrated dielectric barrier discharge plasma reactor as ozone generator. This paper presented a characterization of an integrated ozone generator constructed by seven of reactors



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of dielectric barrier discharge plasma (DBDP). They found that ozone concentration increased with the applied voltage, but in contrary, the concentration decreased with the flow rate of dry air. The higher ozone capacity can be produced with higher input power, but lower efficiency. The effect of dry air flow rate and applied voltage on ozone concentrations have been studied.

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I. Istadi (Editor-in-Chief)
Department of Chemical Engineering, Diponegoro University
E-mail: istadi@che.undip.ac.id