Assoc. Prof. Dr. I. Istadi
Editor-in-Chief
Bulletin of Chemical Reaction Engineering & Catalysis

Bandung, November 28, 2018

Dear Assoc. Prof. Dr. I. Istadi,

Please find enclosed file of our manuscript entitled "Preparation of HCl-Doped Polyaniline for Conducting-Polymer-Activated Counter Electrode in Dye Sensitized Solar Cell (DSSC) using High-Temperature Rapid-Mixing Polymerization" by Amalina et.al., which we would like to submit for journal publication in Bulletin of Chemical Reaction Engineering & Catalysis.

Dye Sensitized Solar Cell (DSSC) is a photoelectrochemical cell that consist of photoanode, electrolyte, and counter electrode. In this paper, we focused on material for counter electrode in DSSC. Counter electrode requires a high conductive substrate laminated by an electrocatalytic active material. Thus, counter electrode is usually made of highly conductive metal with high electrocatalytic activity, notable noble metals from platinum group, i.e. Pt, Pd, Ru, Rh, etc. In recent years, researchers tend to developed Pt-free DSSC due the scarcity of Pt on earth crust and its high price. This leads to the production of DSSC with lower cost, consequently open a wider market. In most cases, Pt was replaced by carbon based materials, i.e. graphite, activated carbon, graphene, etc. On the other hand, the applications of conductive polymer to enhance the electrocatalytic activity, like polyaniline (PANI).

Polyaniline (PANI) has widely used due to its application of optoelectronic properties, wide range conductivity, easy doping/de-doping process, and good chemical stability. PANI has been frequently used as counter electrode material, notably PANI ES (polyaniline emeraldine salt). As counter electrode, PANI ES is usually mixed with graphite to increase its electrical conductivity, while PANI ES provides good electrocatalytic activity. To have PANI ES with high conductivity, the polymerization has to be performed at low temperature. However, low temperature polymerization is generally more difficult to control with respect to the high temperature polymerization. This study focuses on the HCl-doped polyaniline synthesis using high-temperature rapid-mixing method. High temperature polymerization means cheaper process, simpler experimental set-up, and more controllable condition than at low temperature. High temperature synthesized PANI will be used as the electrocatalytic material for counter electrode in DSSC.

We confirm that this manuscript has not been published elsewhere and is not under consideration by other journals. All authors have approved the manuscript and agree with submission to Bulletin of Chemical Reaction Engineering & Catalysis. We have read and have abided by statement of ethical standards for manuscript submitted to Bulletin of Chemical Reaction Engineering & Catalysis. The authors have no conflicts of interest to declare.

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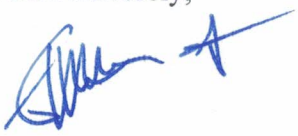
On behalf of authors, we would like to thank you in advance for the time and effort you expend considering our work. Below is the list of proposed reviewers for reviewing this manuscript. We shall look forward to hearing from you at your earliest convenience.

Yours sincerely,



Dr. Veinardi Suendo