



Reaction Temperature Effect on Pullulan Mediated Zinc Oxide Synthesis and Its Photocatalytic Activity

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Abstract:

Textiles industries is one of the most important industries towards mankind as they provide the source of clothing for people. To make clothing more interesting, the fabrics were made to be colourful using dyes. However, due to this, the discharge from textile industries into the natural streams or bodies of water contained non-degradable organic dyes. With the growing concern towards the environment, there are need for cost effective solution in removal of dyes from the water. One of the ways is through employment of heterogeneous advanced oxidation processes where it involves the use of semiconductor as catalyst for photocatalytic degradation of dyes. Zinc oxide emerge as a promising material for this process and it is an environmentally friendly materials and relatively cheap compared to titania. In this study, zinc oxide is produced through precipitation method and mediated by a polysaccharide, pullulan. The effect of reaction temperature on the properties on zinc oxide produced was investigated. The zinc oxide obtained were characterized through XRD, FESEM, UV-Vis reflectance, FTIR and surface area and pore analysis. The synthesise zinc oxide was then subjected to photocatalytic activity for degradation of Methyl Orange.

Biography:

Eleen Dayana Mohamed Isa is currently pursuing her PhD at Unversiti Teknologi Malaysia. Previously, she completed her Masters Degree in the field of Materials Science from Unversiti Putra Malaysia. She has published several papers related to synthesis of mesoporous silica nanoparticles and currently doing research regarding syn-



thesis of metal oxides and their application in photodegradation of dyes.

Publication of speakers:

1. Optimization of synthesis parameters of mesoporous silica nanoparticles based on ionic liquid by experimental design and its application as a drug delivery agent; ED Mohamed Isa, H Ahmad, MB Abdul Rahman.
2. Monodispersed mesoporous silica nanospheres based on pyridinium ionic liquids; EDM Isa, MBA Rahman, H Ahmad.
3. Bio-Mediated synthesis and characterisation of Silver Nanocarrier, and its potent anticancer action; KX Lee, K Shameli, SE Mohamad, YP Yew, ED Mohamed Isa, HY Yap.
4. Functionalized mesoporous silica nanoparticles templated by pyridinium ionic liquid for hydrophilic and hydrophobic drug release application; NS Zaharudin, EDM Isa, H Ahmad, MBA Rahman, K Jumbri.
5. Dependence of mesoporous silica properties on its template; EDM Isa, IS Mahmud, H Ahmad, MBA Rahman.

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