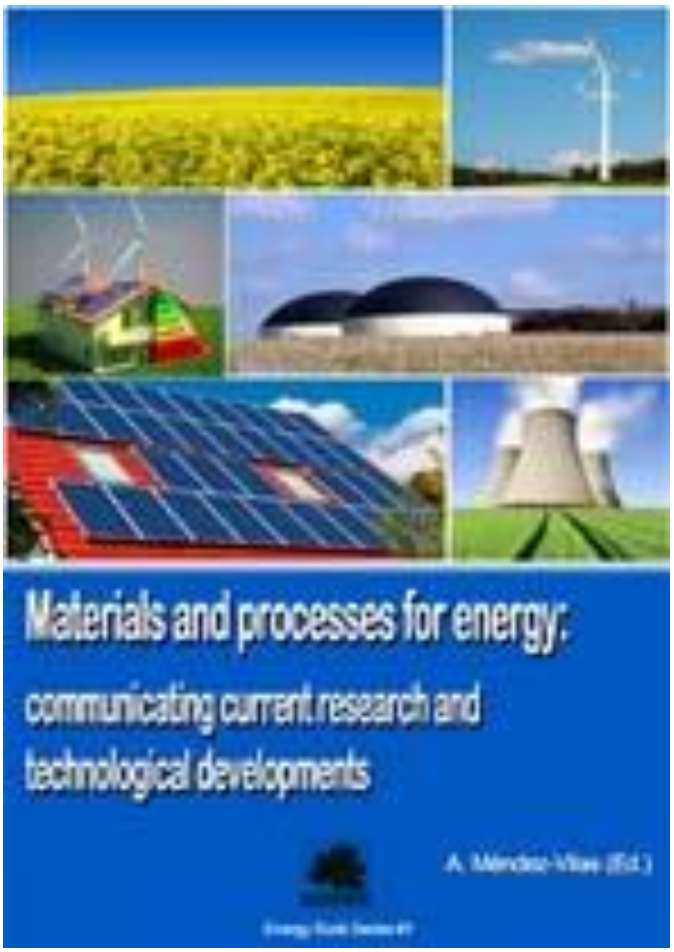

- Book title: Materials and processes for energy: communicating current research and technological developments
- Editor: A. Mendez-Vilas
- ISBN: 978-84-939843-7-3
- Publisher: Formatex Research Center
- Publication date: August 2013

Materials and processes for energy: communicating current research and technological developments (A. Méndez-Vilas, Ed.)

Valorisation of glycerol into biofuel additives over heterogeneous catalysts

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Transesterification of glycerol with methyl acetate was carried out over resins, poly(vinyl alcohol) (PVA) and chitosan (CH) with sulfonic acid groups at 70° C. The products of glycerol transesterification are monoacetin, diacetin and triacetin. It was observed that the catalytic activity increases with the amount of sulfonic acid groups on materials. The CH material showed the highest catalytic activity of all catalysts. In order to study the catalytic stability of CH-SO3H, three consecutive batch runs with the same catalyst were carried out. The CH-SO3H catalyst can be recycled and reused with negligible loss in the activity, after third use.

Keywords: bio-additives, biodiesel, glycerol, heterogeneous catalysts

- Chapter title: "Valorisation of glycerol into biofuel additives over heterogeneous catalysts"

- Pages of the mentioned chapter: 422-429(both included)

- Book title: "Materials and processes for energy: communicating current research and technological developments"

- Editor: A. Méndez-Vilas

- Publisher: Formatex Research Center

- ISBN (13): 978-84-939843-7-3

- Publication date: August 2013

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