

## Accepted Manuscript

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## Bimetallic Pd-Fe supported on $\gamma$ -Al<sub>2</sub>O<sub>3</sub> catalyst used in the ring opening of 2-methylfuran to selective formation of alcohols.

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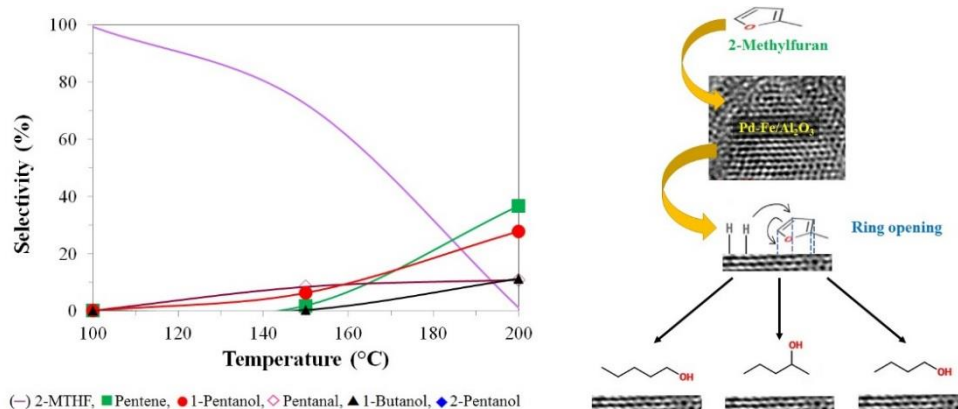
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### Graphical Abstract



<InlineImage1>

### Highlights

- Monometallic Pt and Pd, and Bimetallic Pt-Fe and Pd-Fe catalysts were supported on  $\gamma$ -Al<sub>2</sub>O<sub>3</sub>.
- The bimetallic Pd-Fe/Al<sub>2</sub>O<sub>3</sub> catalyst showed the best 2-MF conversion performance.
- The Pd-Fe/Al<sub>2</sub>O<sub>3</sub> catalyst also showed the best selectivity towards formation of alcohols.
- The TPR profile for the bimetallic Pd-Fe/Al<sub>2</sub>O<sub>3</sub> catalyst reveals the presence of an alloy.
- HR-TEM revealed the presence of FePd<sub>3</sub> nanoparticles.

### Abstract

This work presents the hydrogenation of 2-methylfuran (2-MF) in gaseous fluid phase into a catalytic reactor in order to obtain products with good properties to be used as biofuel.

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