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Kinetics of Homogeneous and Heterogeneous Reactions in the Reductive Aminolysis of Glucose with Dimethylamine

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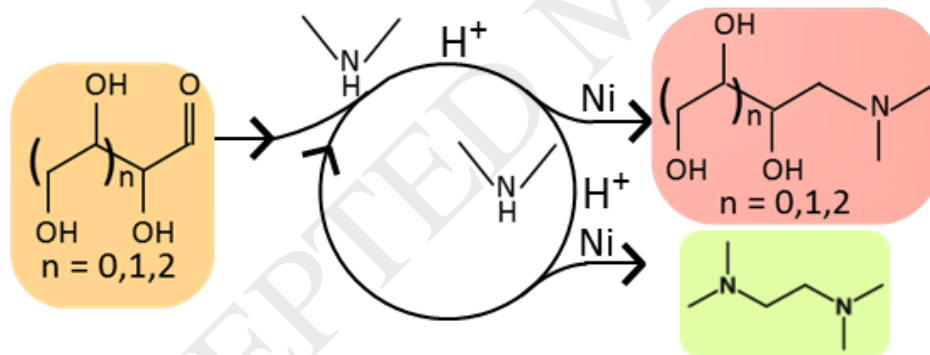
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Graphical Abstract



Highlights

- A kinetic reaction scheme is proposed for glucose reductive aminolysis.
- Three types of catalysis are present herein: acid, metal and homogeneous catalysis.
- The product spectrum is accurately simulated by the developed kinetic model.
- Nitrogen heteroatoms reduce the activation energy for retro-aldol cleavage.
- Temperature control is critical to suppress degradation of glucose and derivatives.

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