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Title:	Advances in the Catalytic Reductive Amination of Furfural to Furfural Amine: The Momentous Role of Active Metal Sites
Authors:	Babu, Srinivasarao Arulananda (/jspui/browse?type=author&value=Babu%2C+Srinivasarao+Arulananda)
Keywords:	Catalytic Reductive Amination Furfural to Furfural Amine Momentous Role of Active Metal Sites
Issue Date:	2022
Publisher:	John Wiley & Sons
Citation:	ChemSusChem, 15(7), 2200107.
Abstract:	One-pot synthesis of sustainable primary amines by catalytic reductive amination of bio-based carbonyl compounds with NH ₃ and H ₂ is emerging as a promising and robust approach. The primary amines, especially furfuryl amine (FUA) derived from furfural (FUR), with a wide range of applications from pharmaceuticals to agrochemicals, have attracted much attention due to their versatility. This Review is majorly comprised of two segments on the reductive amination of FUR to FUA, one with precious (Ru, Pd, Rh) and the other with non-precious (Co, Ni) metals on different supports and in various solvent systems in the presence of NH ₃ and H ₂ . The active metal sites generated on multiple supports are accentuated with experimental evidence based on CO-diffuse reflectance infrared Fourier-transform spectroscopy, H ₂ temperature-programmed reduction, X-ray photoelectron spectroscopy, and calorimetry. Moreover, this Review comprehensively describes the role of acidic and basic support for the metal on the yield of FUA. Overall, this Review provides an insight into how to design and develop an efficiently robust catalyst for the selective reductive amination of a broad spectrum of carbonyl compounds to corresponding amines.
Description:	Only IISER Mohali authors are available in the record.
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