

Review

Deep Eutectic Solvents (DESs): Emerging viable solvent systems for transition-metal-catalyzed cross-coupling reactions

Sharda Pasricha  , Pragya Gahlot, T.M. Rangarajan  , Shikha, Deepak, Harsh Pahuja, Divya Yadav, Pratham, Khushboo Pilonia, Sachid Anand

[Show more](#) 

 Add to Mendeley  Share  Cite

<https://doi.org/10.1016/j.molliq.2025.127287> 

[Get rights and content](#) 

Highlights

- Use of DES in transition metal catalysed cross-coupling reactions is reviewed.
- TM catalysts based on Pd, Fe, Co, Cu, and Ni etc. are deliberated.
- Roles of DESs as catalyst, solvent, nucleophile, ligand, substrate are highlighted.
- Advancement of reaction parameters and catalytic activity in DES is reflected.
- Improved green chemistry matrices suggested as desirable attribute for industry.

Abstract

The worth of solvents in organic synthesis is often underestimated and misunderstood. The utilization and introduction of newer solvents are encouraged over traditional solvents. Thanks to green chemistry regulations, they are becoming increasingly reported for cross-coupling reactions and all other organic reactions. Deep eutectic solvents (DESs) have become a trend in the current green millennium and are worth exploring for their role in cross-coupling reactions. A brief overview of the history, classification, methods of preparation, and applications of DESs towards cross-coupling reactions are deliberated;