Title: Designing effective homogeneous catalysis for glycerol valorisation: selective synthesis of a value-added aldehyde from 1,3-propanediol *via* hydrogen transfer catalysed by a highly recyclable, fluorinated Cp*Ir(NHC) catalyst

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Designing effective homogeneous catalysis for glycerol valorisation: selective synthesis of a value-added aldehyde from 1,3-propanediol *via* hydrogen transfer catalysed by a highly recyclable, fluorinated Cp*Ir(NHC) catalyst.

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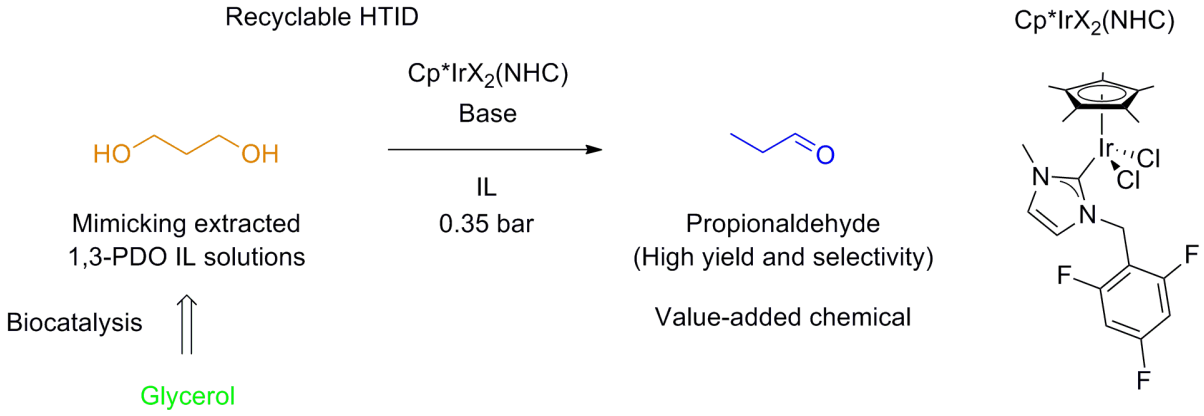
Graphical abstract



Highlights

- Hydrogen transfer initiated dehydration (HTID) of 1,3-PDO in ILs is presented.
- Recyclable, selective production of propionaldehyde in high yields has been achieved.
- The HTID activity of fluorinated and methylated Cp*Ir(NHC) complexes is discussed.
- The crucial role of Cp*Ir(NHC) *ortho*-C-X substituents in HTID is discussed.