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## **From lignocellulose to valuable aromatics and fuels**

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**L**ignocellulose, the main component of agricultural and forestry waste, harbors tremendous potential as a renewable starting material for future biorefinery practices. However, this potential remains largely unexploited due to the lack of comprehensive strategies that derive substantial value from all its main constituents. Here, we present such a catalytic strategy, which is able to transform lignocellulose to a range of attractive products. At the center of our approach is the flexible use of a non-precious metal catalyst (Cu doped porous metal oxides) in two distinct stages of a lignocellulose conversion process that enables integrated catalyst recycling through full conversion of all process residues. The lignin part was selective converted to dihydroconiferinyl alcohol (1G). Pharmaceutical and polymer building blocks were then obtained by catalytic conversion of 1G. Notably, amongst these are the first systematic chemo-catalytic methodologies to yield amines from lignin. The cellulose-derived aliphatic alcohols are transformed to alkanes, achieving excellent total carbon utilization. This work will inspire the development of fully sustainable and economically viable biorefineries.