

Direct Hydrolysis of Lignocellulosics on Solid Acid Catalysts: An Explorative Screening

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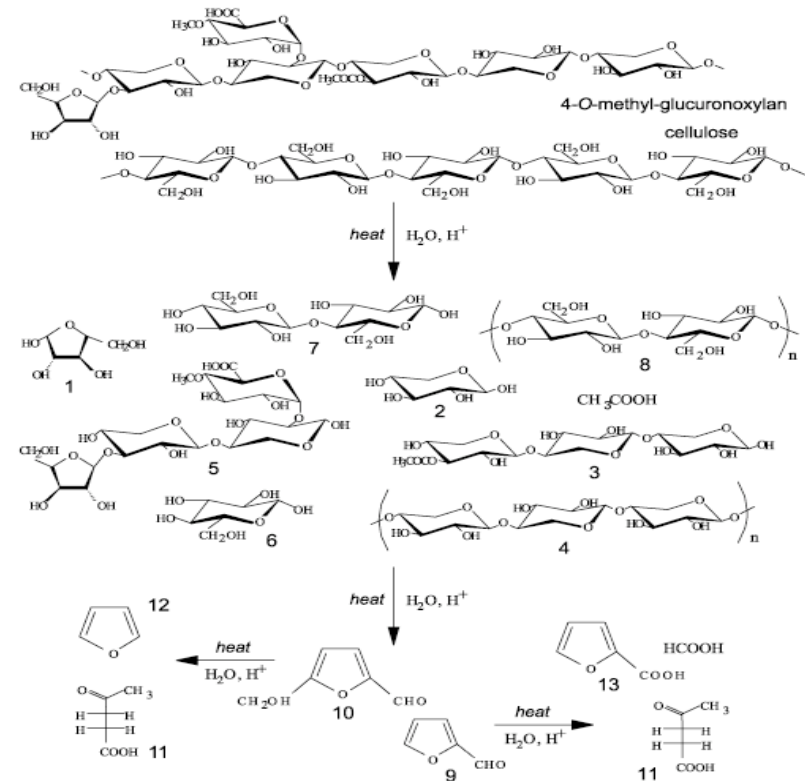
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THE CHALLENGE

- 1) Hydrolysis of lignocellulosics to monosaccharides in *aqueous phase*
- 2) No physical or chemical *pretreatments*
- 3) Use of *heterogeneous catalysis*



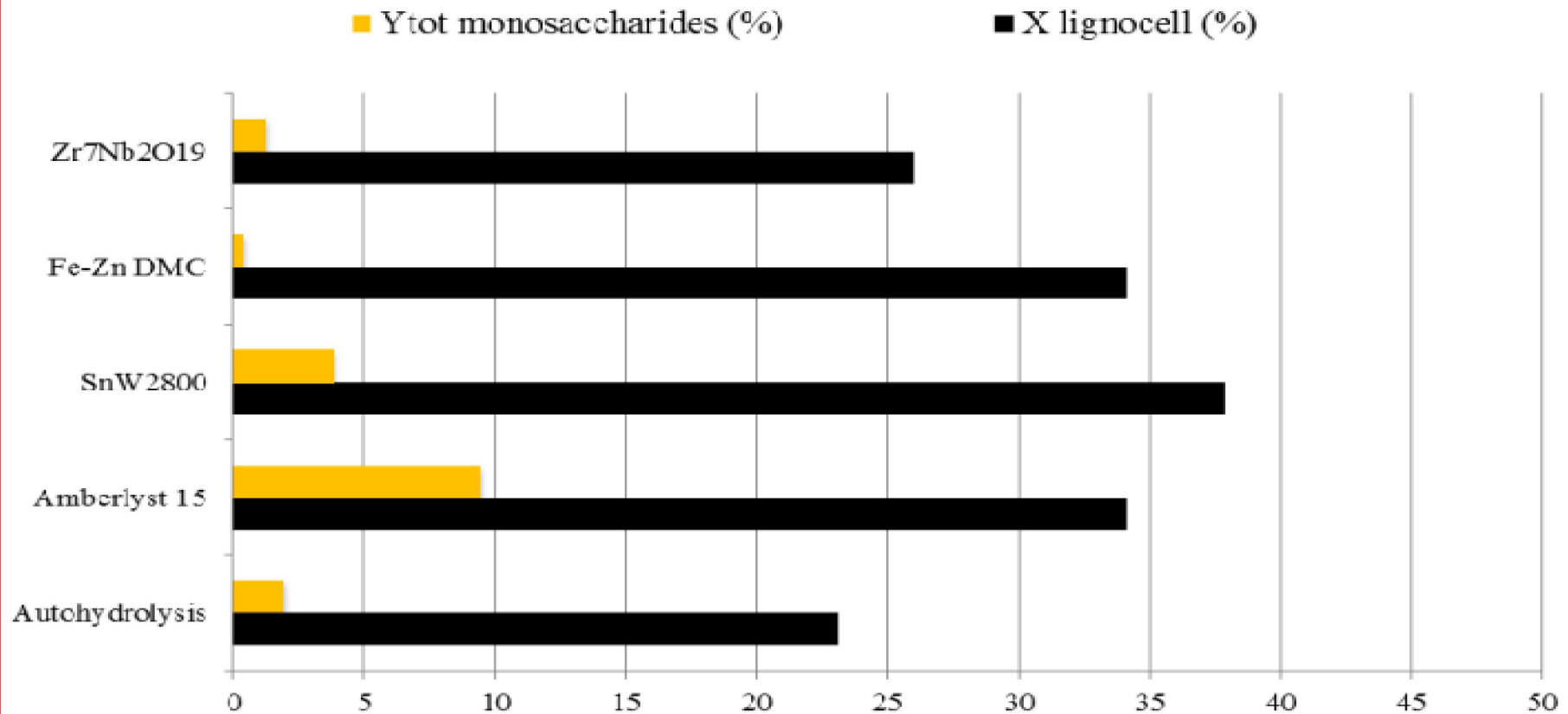
SEEKING OF NEW SOLID ACID CATALYSTS ACTIVE IN THE HYDROLYSIS

DIRECT HYDROLYSIS OF LIGNOCELLULOSICS TO MONOSACCHARIDES

Batch Reactor

Temperature = 150 ° C

Reaction Time = 5 hours



$$X_{lignocell} = \frac{m_{lignocell} - m_{residuo}}{m_{lignocell}}$$

$$Y_{monosaccharides} = \frac{m_{monosaccharides}}{m_{lignocell}}$$

CONCLUSIONS

In order to develop new catalytic technologies for future biorefinery operations it is necessary to ***explore and expand knowledge*** about ***heterogeneous acid-base catalysis***

A Sn-W mixed Oxide presents (but needs improvement) a moderate activity with respect to autohydrolysis.