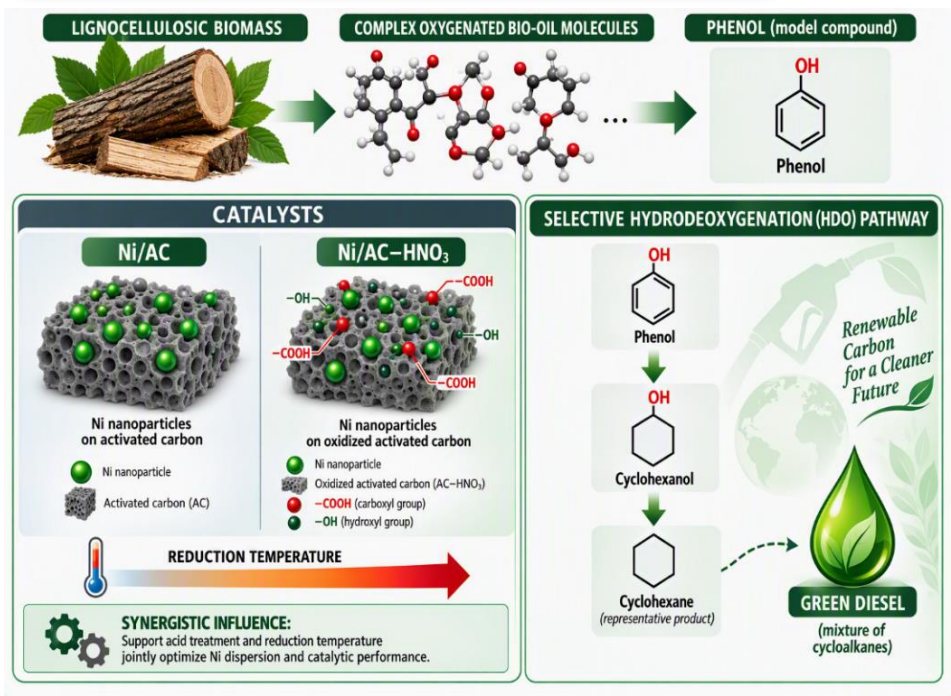
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Nickel-based catalysts supported on activated carbon for synthetizing green diesel

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Introduction



Methodology



Objectives

- to investigate the effect of oxidative treatment of activated carbon with HNO_3 and the reduction temperature on the structural properties and catalytic performance of Ni-based catalysts supported on activated carbon for the selective hydrogenation of phenol.

Results and Discussion

TPR

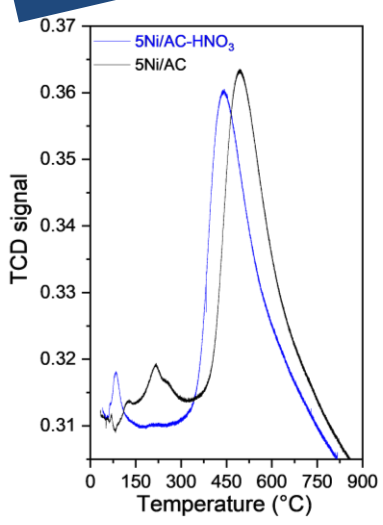


Fig. 1 – Profiles of H_2-TPR of 5Ni/AC precursor & 5Ni/AC-HNO_3.

DRX

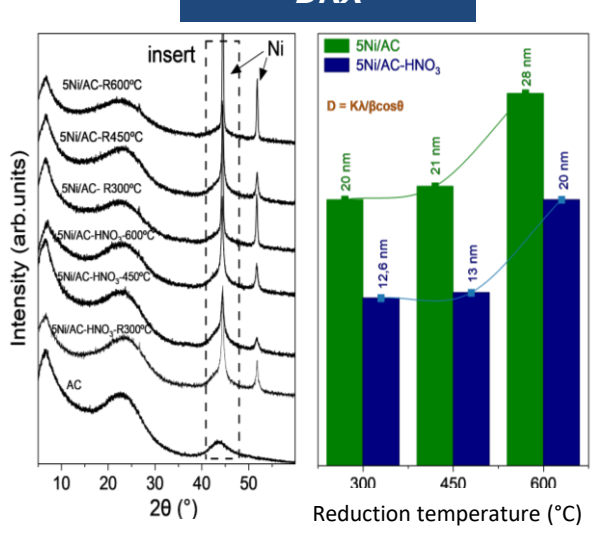


Fig. 2 – XRD of 5Ni/AC & 5Ni/AC-HNO_3 catalysts reduced at 300, 450 and 600° C; Average Ni crystallites size

SAXS

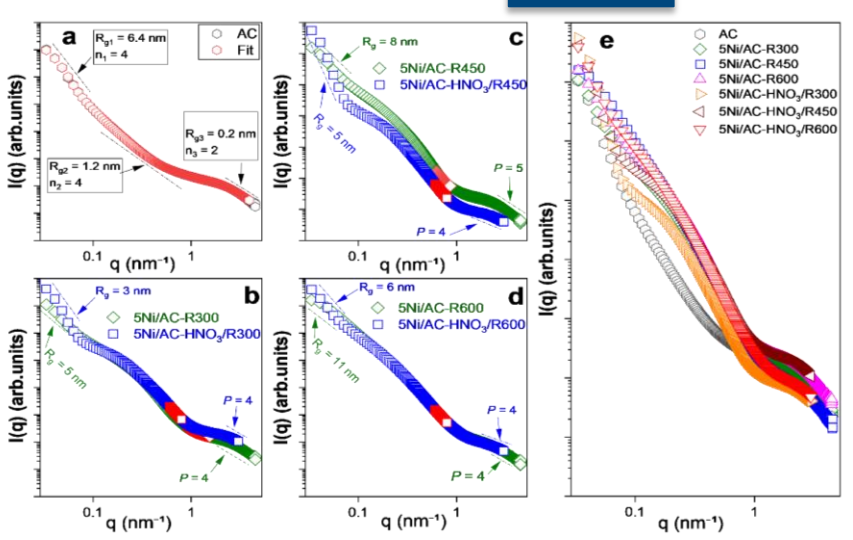


Fig. 4 – SAXS curves of AC, 5Ni/AC & 5Ni/AC-HNO_3 catalysts.

MET

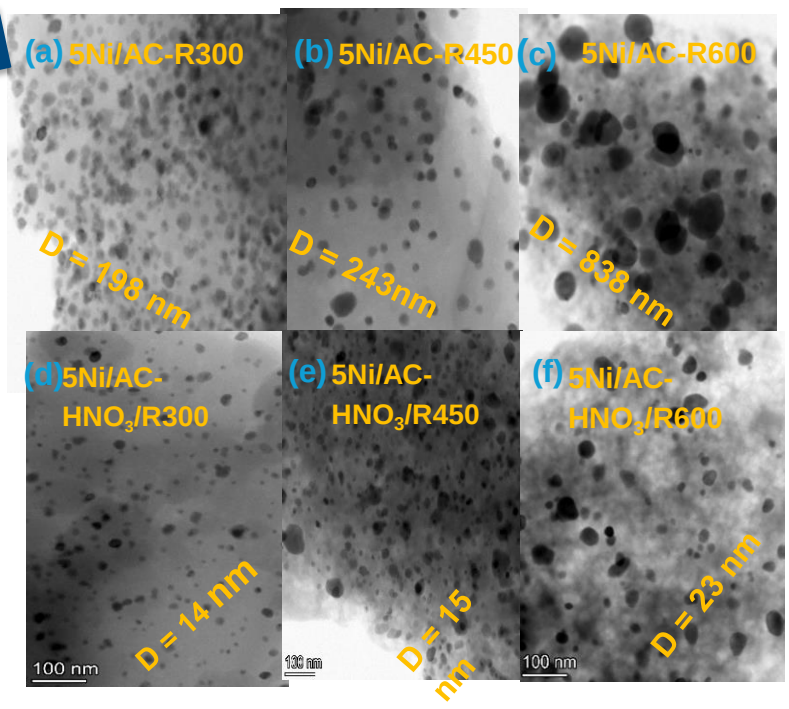


Fig. 3 – (a-c) TEM micrograph of 5Ni/AC catalysts and 5Ni/AC-HNO_3 (d-f) catalysts reduced at 300, 450 and 600ºC, respectively.

SELECTIVITY FOR CYCLOHEXANOL (%)

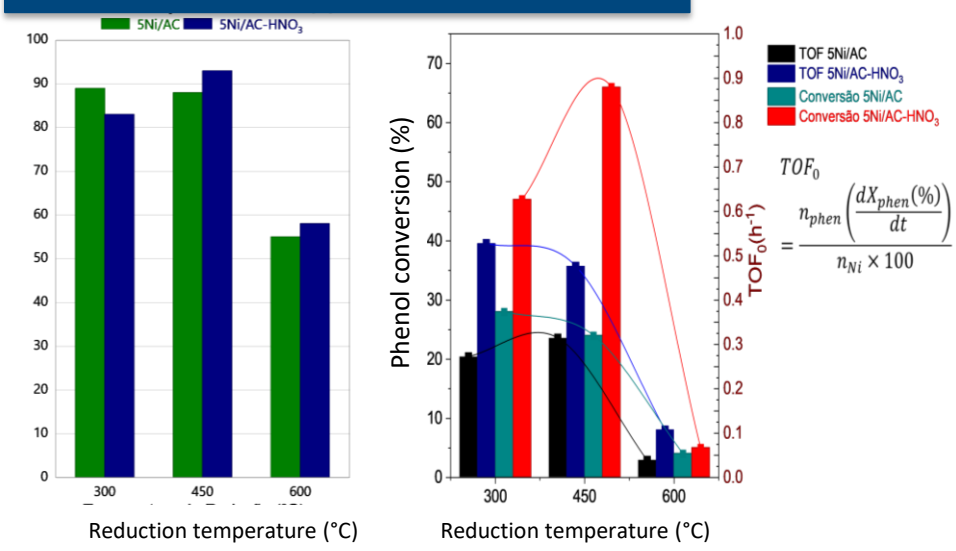


Fig. 5 - Catalysis of 5Ni/AC & 5Ni/AC-HNO_3 and TOF.

Conclusions

- **600 °C promotes sintering and loss of activity.**
- **5% HNO_3 modifies texture and metal–support interaction.**
- **Route predominantly selective for cyclohexanol.**

Acknowledgments

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