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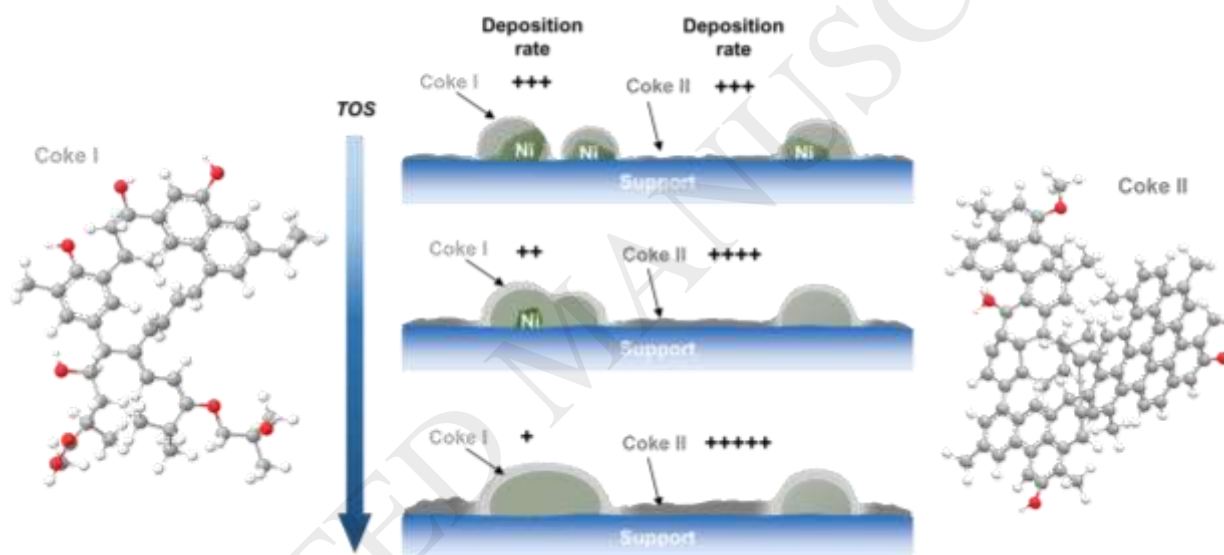
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Coking and sintering progress of a Ni supported catalyst in the steam reforming of biomass pyrolysis volatiles

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Graphical abstract



Highlights

- A novel two-step process for continuous hydrogen production from biomass is studied
- Ni catalyst used for producing H₂ from biomass suffers from deactivation
- Deactivation occurs due to the simultaneous Ni sintering and encapsulation (by coke)
- Encapsulating coke is formed from condensation of oxygenates (particularly phenols)
- Coke deposited on catalyst support is formed from thermal decomposition of phenols

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