

# Realization of a low carbon society through game changing technologies

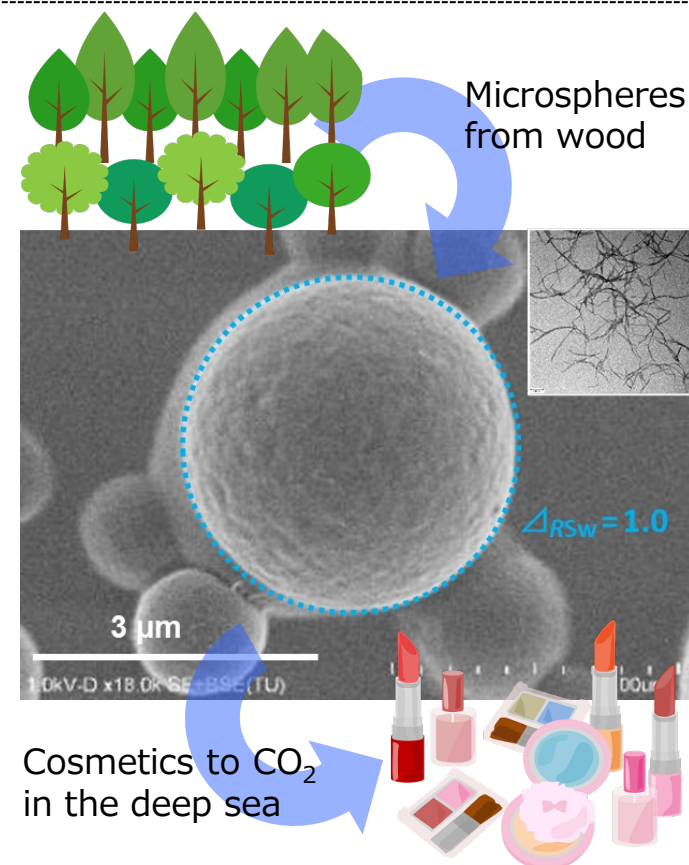
## Development of Wood-mimetic Microparticles by Nanocellulose-mediated Interfacial Catalysis

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### Summary :

This project aims at developing bio-inspired wood-based microparticles for cosmetic applications through innovative interfacial catalysis of cellulose nanofibers (CNFs) to synthesize lignin-mimetic replicates in Pickering emulsion systems. In nature, marine microorganisms have inhabited the deep sea over the years, while metabolizing woody debris. CNFs possess unique chiral nanoarchitecture to affect interfacial catalysis, and act as a solid surfactant to fabricate stable emulsion particles. Spherical core-shell microparticles composed of lignin cores and CNF shells will be synthesized in the Pickering emulsion-mediated catalytic systems. The developed wood-mimetic microspheres will perform as a carbon carrier for long-term storage in the deep sea after disposal, which will contribute to achieving the Sustainable Development Goals and a low carbon society.



PL Laboratory Website: <http://bm.wood.agr.kyushu-u.ac.jp/>