



**CIRCULAR
BIOECONOMY**



LIGNOSPHERE: BIO-BASED ADHESIVES AND COATINGS FROM COLLOIDAL LIGNIN PARTICLES



LignoSphere Company Oy, FinnCERES (Aalto University) | Finland



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Lignin, a sidestream from pulp production, is turned into bio-based adhesives and coatings as a replacement to petrochemical raw materials.

Pulping produces over 50 million tonnes of lignin a year, most of it burned for energy. LignoSphere, a spin-off from Professor Monika Österberg's group at Aalto University and FinnCERES, converts kraft lignin into colloidal particles: uniform, water-dispersible spheres supplied as a powder that replaces synthetic phenolic compounds and other fossil-derived raw materials in coatings and adhesives. Because the particles disperse into existing formulations, manufacturers can substitute fossil carbon without redesigning their process, at cost parity, with no green premium. The patented technology has been tested with industrial partners in metal, concrete and wood coatings as well as wood adhesives on engineered wood.

