

Research Article

## Mold Resistance of Bamboo after Laccase-Catalyzed Fixation of Lignin Nanoparticles

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### Graphical Abstract

The bamboo was effectively fixed with lignin nanoparticles and iodolignin nanoparticles using laccase catalyzed oxidation. The surface morphology of treated bamboo showed that elemental iodine was fixed onto the bamboo surface. The fungal isolate from the bamboo culm of *Dendrocolanus asper* were molecularly identified as *Penicillium sumatrense*, *Cunninghamella* and *Pleosporales* species. The treated bamboo were further explored for antifungal applications. The bamboo treated with iodolignin nanoparticles exhibited excellent biocidal effect at 91%. The treated bamboo also exhibited good decay resistance at 3% mass loss against the tested fungi.



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