Showcasing research from Assistant Professor Mika Sipponen's Sustainable Materials Chemistry (SUSMATCHEM) research group, Stockholm University.

Mechanically recyclable melt-spun fibers from lignin esters and iron oxide nanoparticles: towards circular lignin materials

Unnimaya Thalakkale Veettil *et al.* controlled the esterification of softwood kraft lignin to produce microfibers through solvent-free melt spinning using an unconventional tool—the cotton candy machine. The incorporation of magnetite nanoparticles into these microfibers allows for their magnetic separation. Recycling of the fibers used as an adsorbent is possible without dye desorption through repeated melt spinning. Additionally, the microfibers facilitate oil/water separation. This work paves the way for lignin-based circular materials towards a sustainable society.

Artwork by Mohammad Morsali.

As featured in:

See Mika H. Sipponen *et al.*, *Green Chem.*, 2023, **25**, 10424.

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