



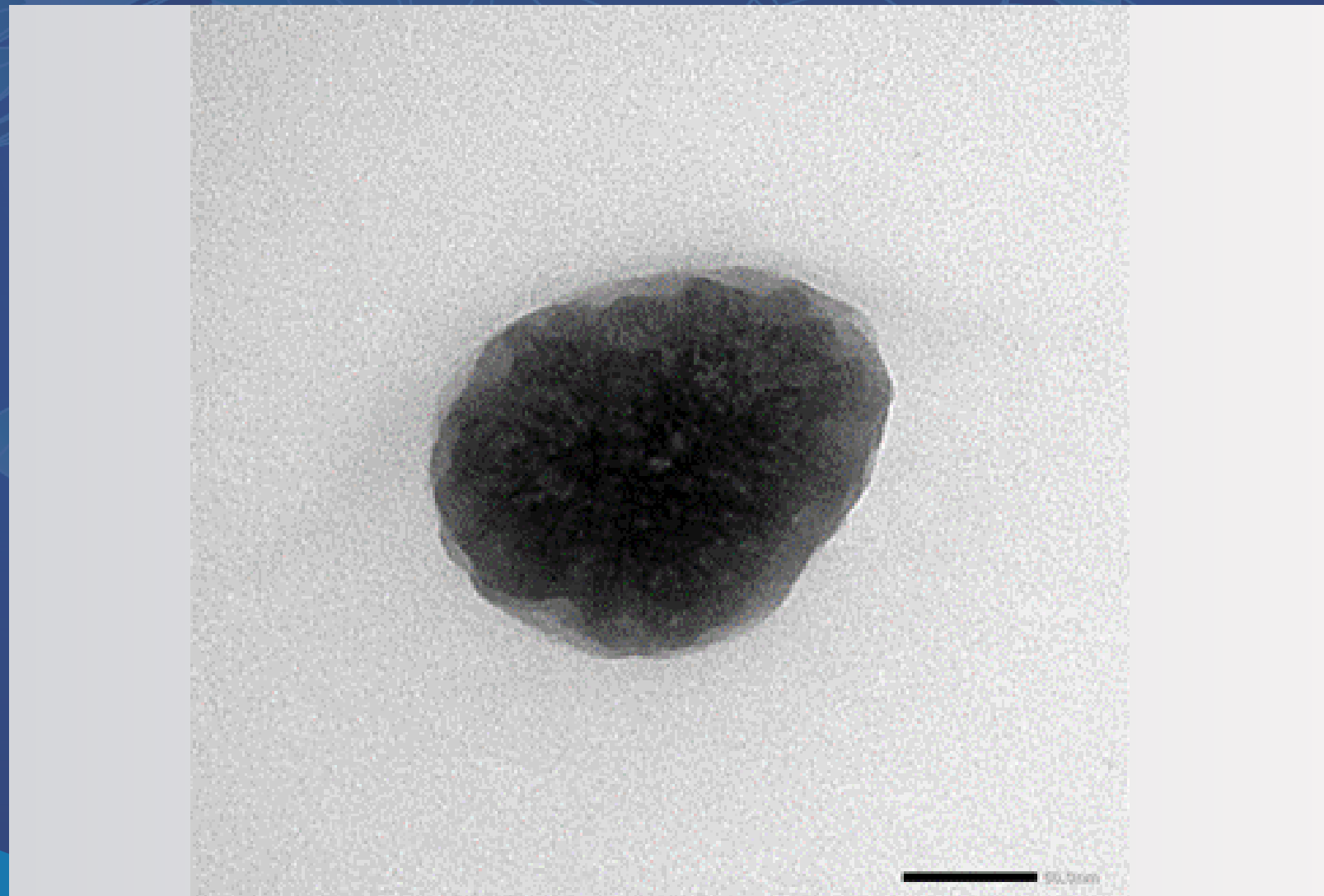
RELIANCE

Stimuli responsive copper-doped silica mesoporous nanoparticles

Stimuli responsive polymer brushes shell, which respond to external stimuli and enable controlled bioactive release

The Challenge

**Controlled release of effective antimicrobial actives
against a wide range of virus, bacteria and fungi.**



The Achievement

- Polymer brushes as a validated system that delivers active compounds slowly and predictably.



Key Conclusions

- Gaining better understanding of the release behavior of stimuli responsive copper-doped silica mesoporous particles at different pH values by using an innovative paper-based electrochemical sensor



Recommendations



Further **laboratory scale investigation** is required to **enhance antimicrobial activity** of the stimuli responsive copper doped silica particles



Who is this result for?

- **Researchers**
- **Coating formulators**



Long-term Impact



Promoting sustainability and safety by enabling controlled release of bioactives, minimizing environmental leakage.

Market uptake by aligning with advanced materials innovation goals under European Commission strategies.



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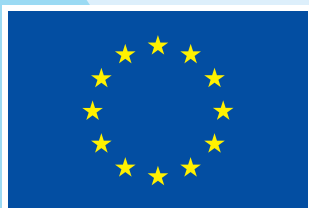
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