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Superhydrophilic nickel-coated meshes with controllable pore size prepared by electrodeposition from deep eutectic solvent for efficient oil/water separation

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KEYWORDS: superhydrophilic, underwater superoleophobic, nickel nanoparticles, electrodeposition, deep eutectic solvent, oil water separation.

ABSTRACT: We demonstrated a facile procedure to prepare nickel-coated meshes via electrodeposition in a deep eutectic solvent (DES) composed by choline chloride (ChCl)-ethylene glycol (EG). The nickel nanoparticles can be uniformly and densely coated on the stainless steel mesh (SSM). The obtained meshes, which pore sizes can be controlled by the deposition time and applied current density, exhibit superhydrophilic and underwater superoleophobic with low adhesive force. By virtue of their excellent antifouling performance, the modified meshes can be applied for the

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