## OA2. MAGNETIC CHITOSAN COMPOSITE PARTICLES: SYNTHESIS REPRODUCIBILITY AND PARAMETER STUDY

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The use of magnetic adsorbents in waste water treatment offers the advantage of facile separation from the liquid phase. Expensive filtration equipment and time-consuming sedimentation in industrial environments is thus avoided.

A method for producing magnetite/chitosan composite particles has been previously developed in small scale. The magnetic nanoparticles were synthesized using an innovative approach, by the partial oxidation of ferrous ions initially dispersed within the polysaccharide solution [1].

The innovative adsorbent material has demonstrated superior efficiency towards various heavy metal ions compared to similar materials described in the literature [2, 3]. A potential problem of the existing synthesis method might come from the inherent variability of a natural raw material. The goal of this study is to evaluate its influence upon the product properties to find ways to overcome it. The expected outcome is improving the reproducibility, robustness and ultimately the technology readiness level of the existing synthesis method, while preparing it for scale-up and transfer into an industrial setting.

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