

# **Boosting the fresh and early age performance of $\text{Bi}_2\text{O}_3$ and $\text{Gd}_2\text{O}_3$ particles in Portland cement pastes via sol-gel silica coatings**

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## **SUPPLEMENTARY MATERIALS**

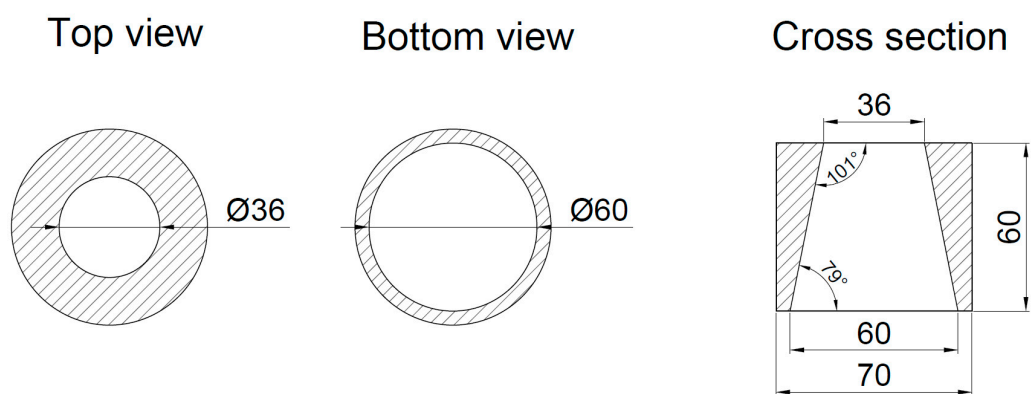


Figure S1. Schematic representation of mini-cone geometry

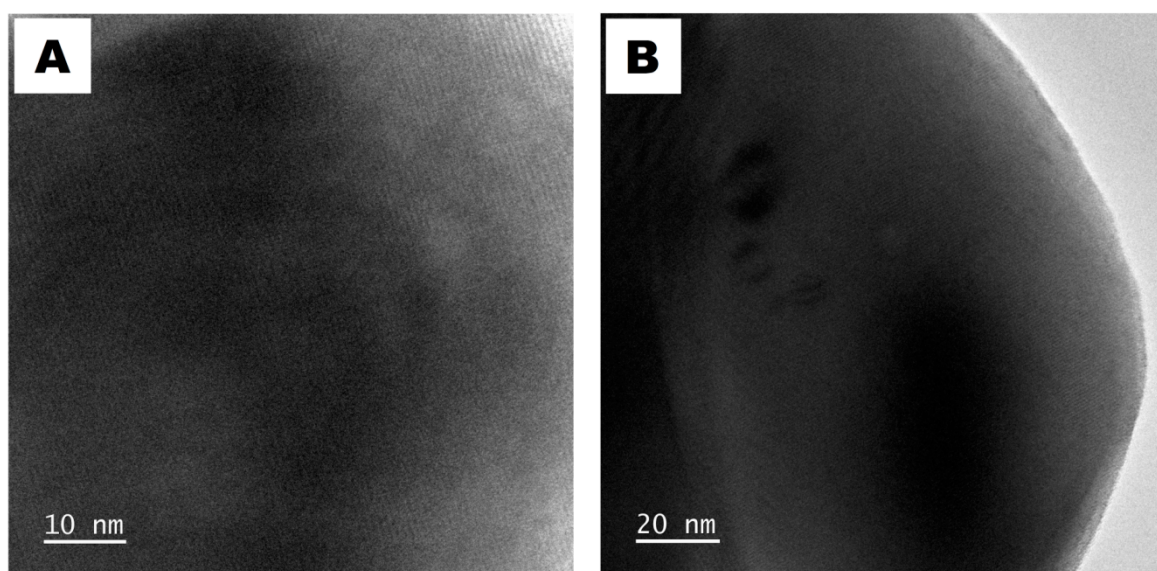


Figure S2. The lattice planes of bismuth oxide (A) and gadolinium oxide (B)

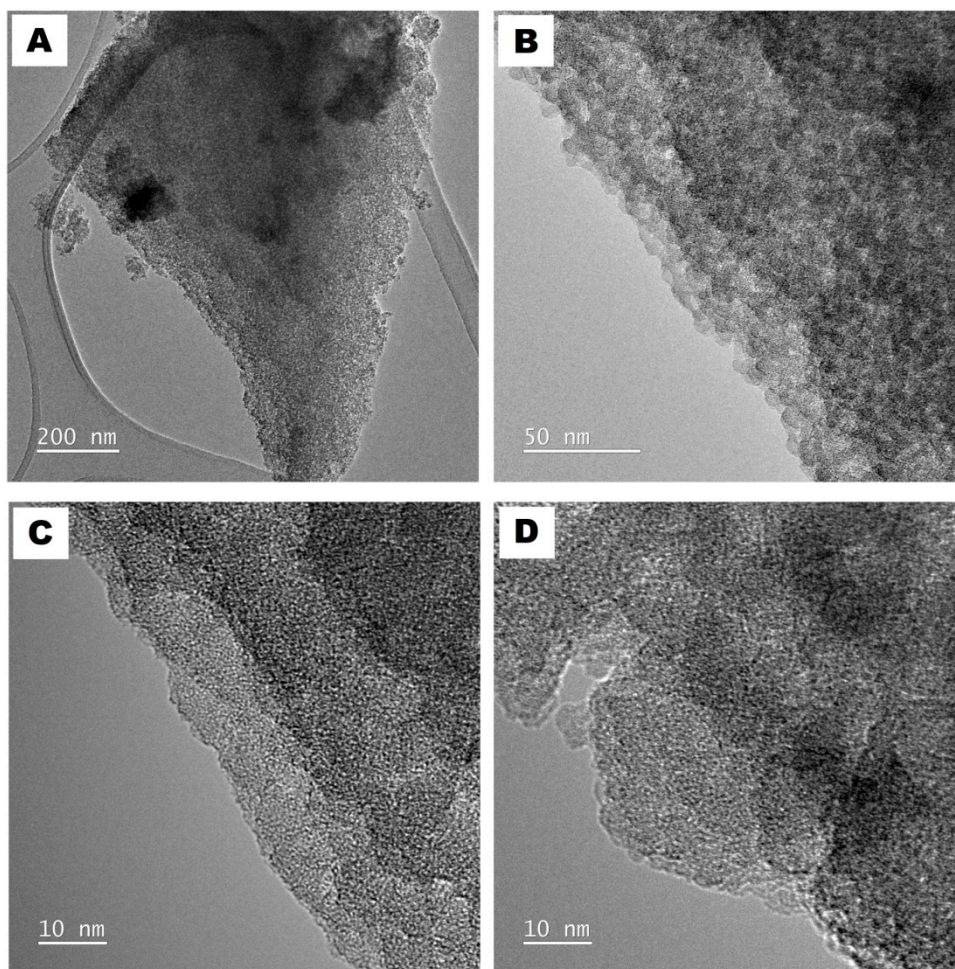


Figure S3. TEM images of silica particles synthesized via method B.

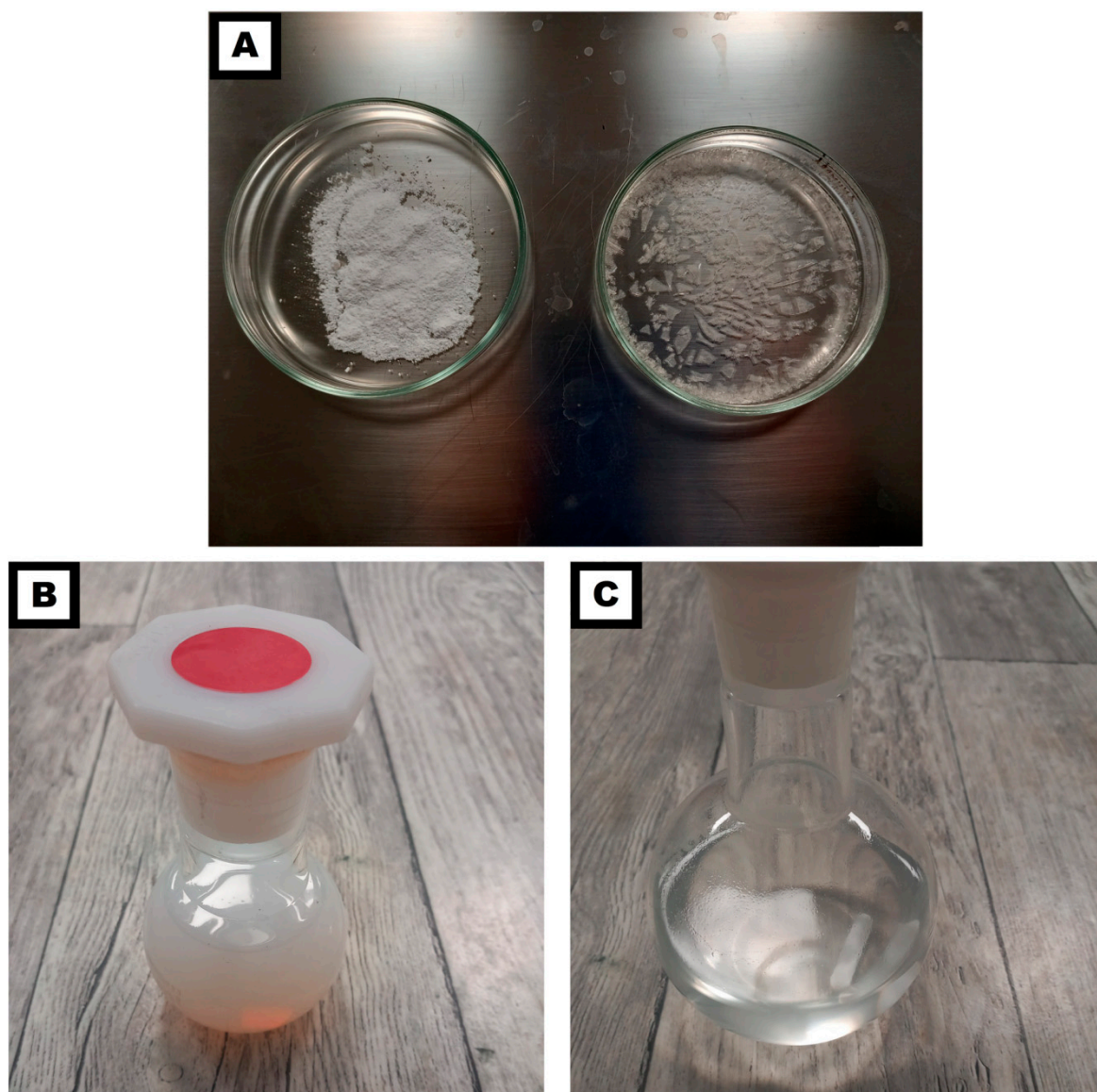


Figure S4. Images of post-synthesis dry silica materials after evaporation (A): method A (left), method B (right) and images of post-synthesis solutions silica via method A (image B) and method - B (C).

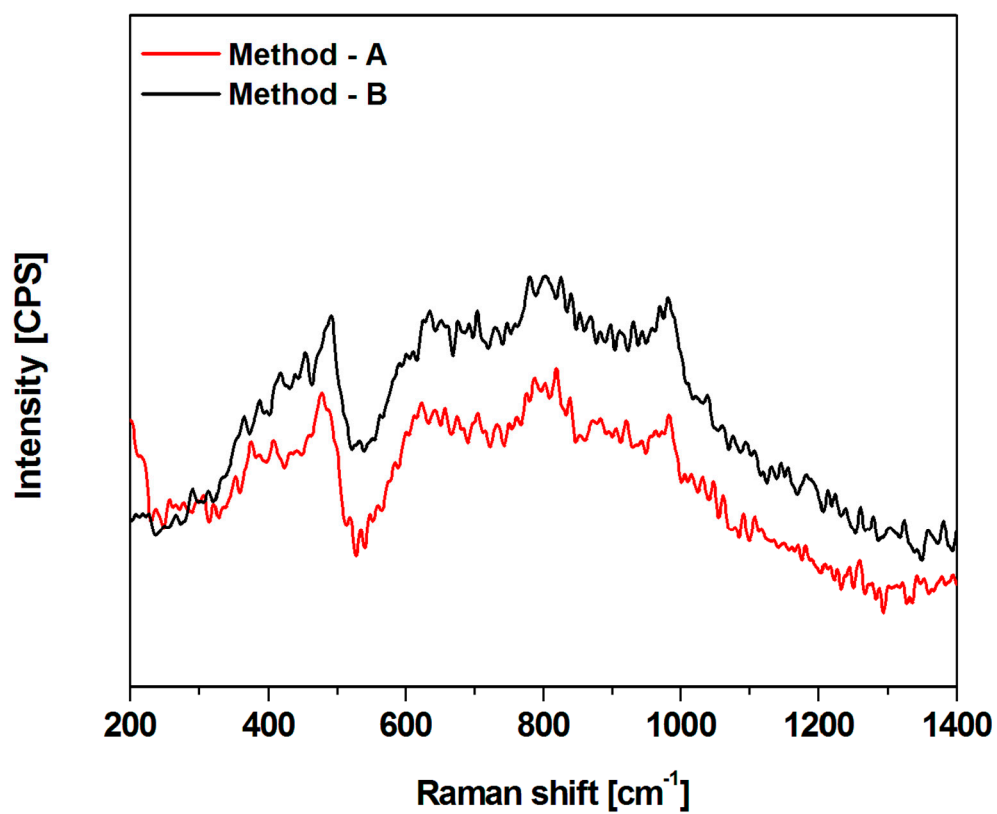


Figure S5. Raman spectra of silica materials synthesized according to the method A and method B, using laser 830 nm.