Fabrication of Guided Tissue Regeneration Membrane Using Lignin Mediated ZnO Nanoparticles in Biopolymer Matrix for Antimicrobial Activity

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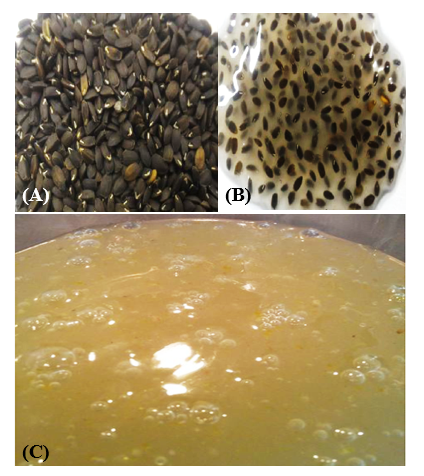
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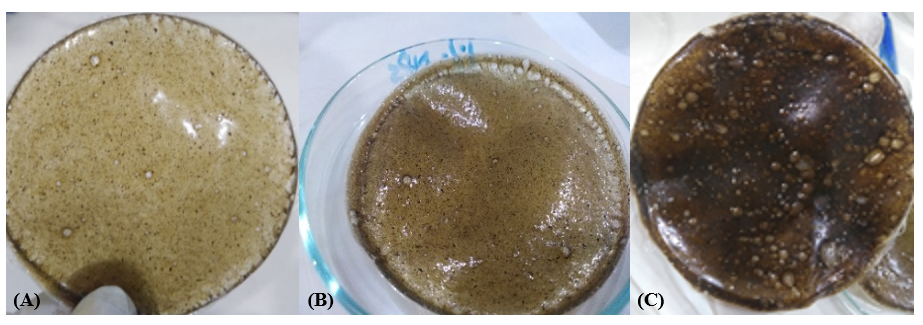
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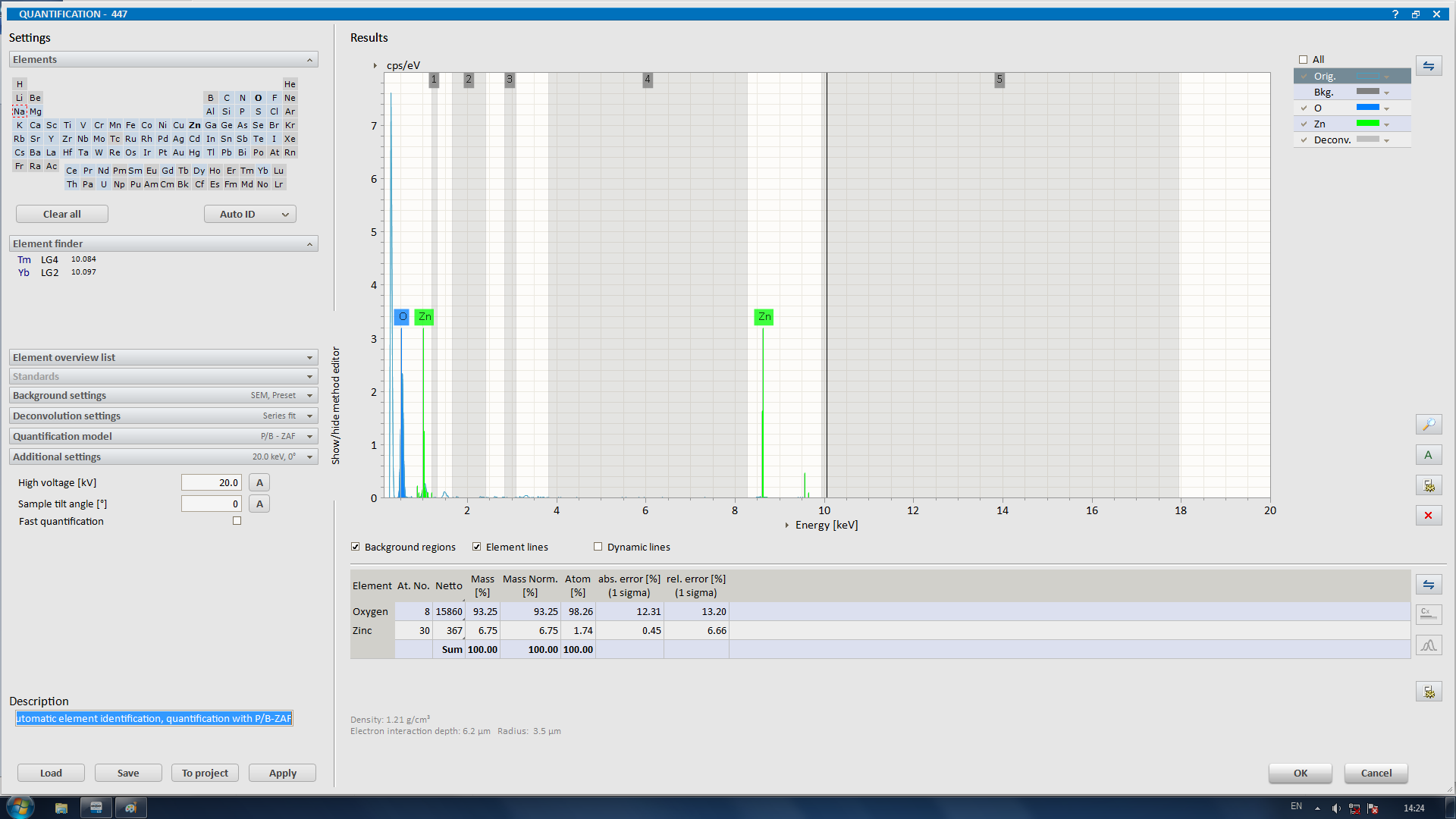
**Figure S1.** Chia seeds (A) before swelling in water (B) swelling in water (C) after extraction.



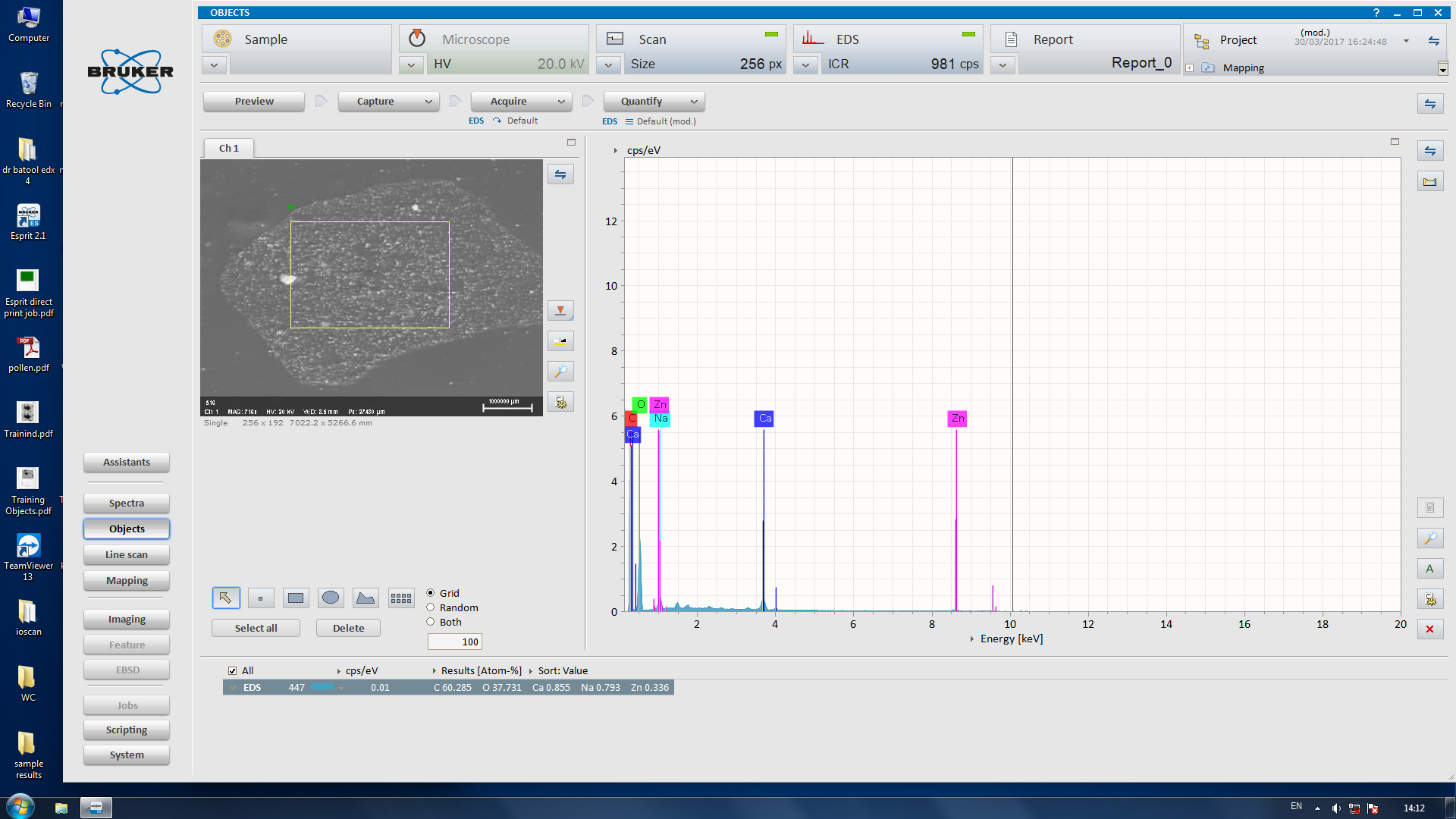
**Figure S2.** Membrane before drying.



**Figure S3.** Prepared membranes after drying (A) membrane having 1% of lignin mediated zinc oxide nanoparticles (B) membrane having 2.5% nanoparticles (C) membrane having 5% of lignin mediated zinc oxide nanoparticles



**Figure S4.** EDX of ZnO NP.



**Figure S5.** EDX of 1% lignin mediated ZnO NPs GTR membrane.