Electronic Supplementary Information (ESI)

Biocomposites prepared by alkaline phosphatase mediated mineralization of alginate microbeads.

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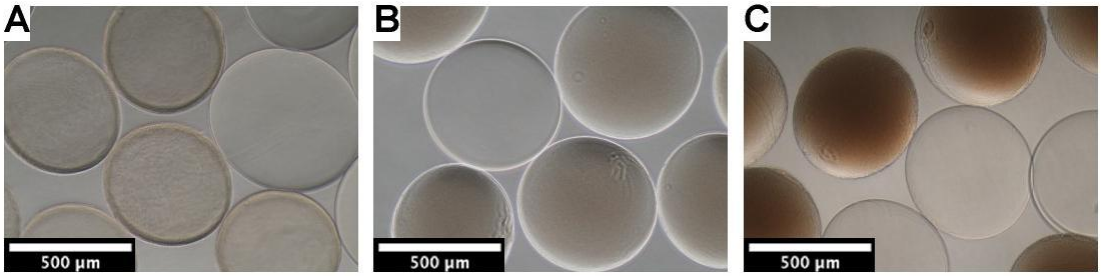

Figure 1. LM showing whole beads in wet condition: (A) Alg/CP-CD; (B) Alg/CP-ALP; (C) Alg/CP-ALP Cell. Non-mineralized alginate beads (transparent) were shown as a control.

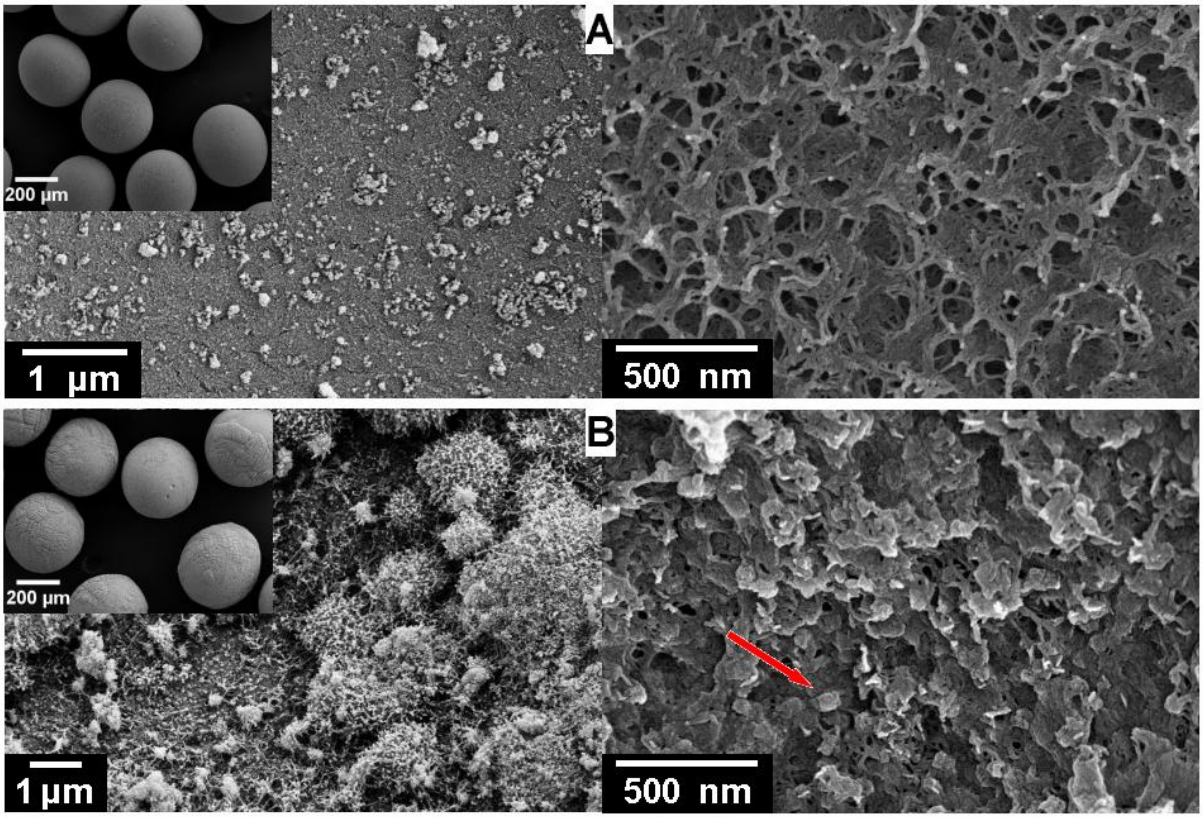

Figure 2. SEM micrographs of Alg/CP-ALP beads, surfaces (left) and internal stuctures (right): (A) was made with 0.1 mg/mL ALP and 2.5 mM β-glycerophosphate, pH 9, 24h, RT; (B) was made with 0.5 mg/mLALP and 5 mM β-glycerophosphate, pH 9, 24h, RT. Red arrow shows the mineral domain containing nano-sized particles.

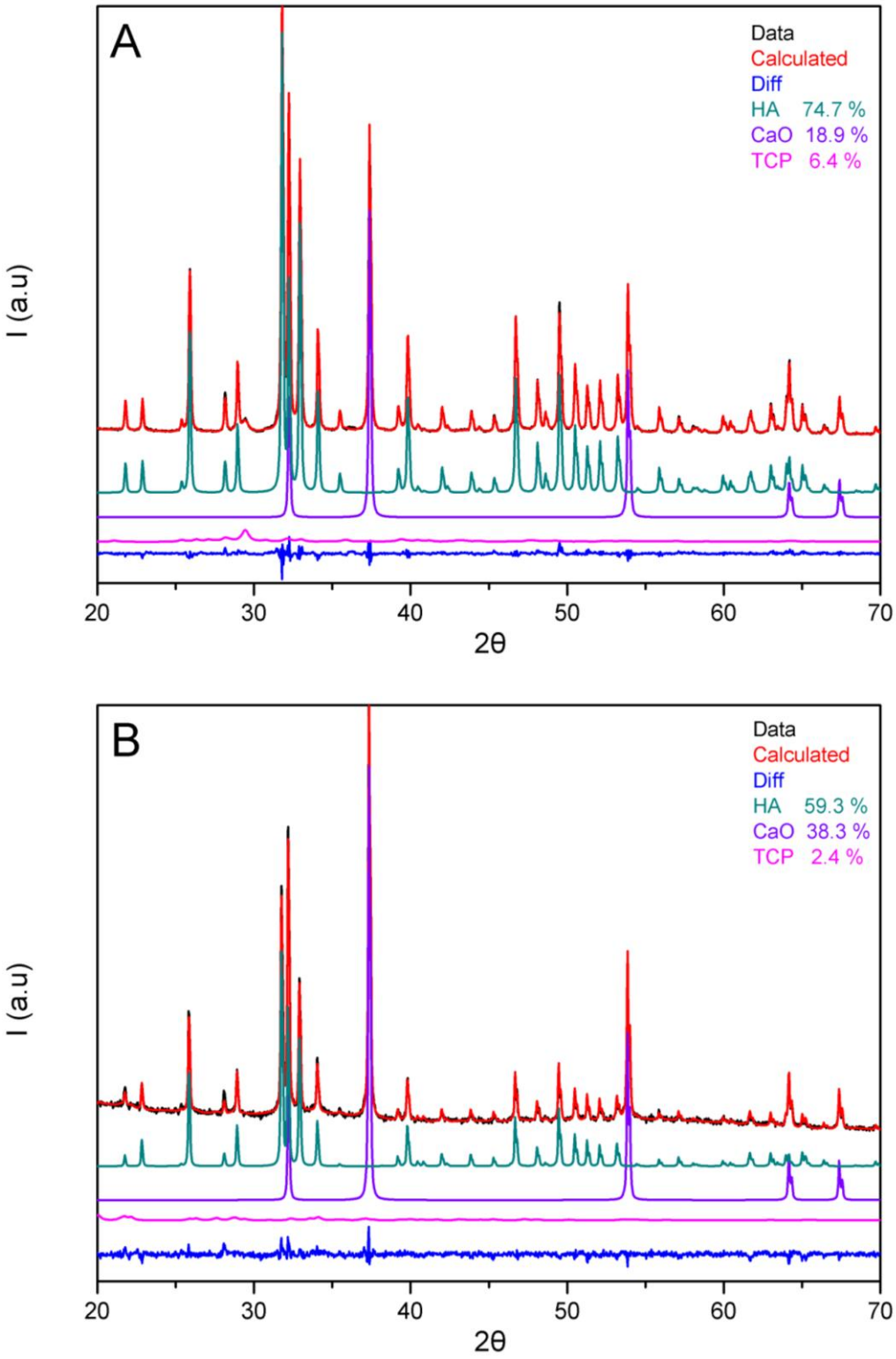

Figure 3. XRD patterns recorded for alginate/CP composites after heat treatment at 1000 ºC. Black and red curves are raw- and refined data, respectively, while the blue curves show the difference between raw- and calculated data: (A) Alg/CP-CD, Rwp (%) is 4.41, and GOF is 1.76; (B) Alg/CP-ALP Cell, Rwp (%) is 5.87, and GOF is 1.38.