**Supplementary Material**

**Table S1.** Parameters for the deposition of the copolymeric mixture on 3D substrate.

| Material | Mixture deposition via dip-coating | | | Wrinkles patterns formation | |
|---|---|---|---|---|---|
| | Speed (mm/s) | | Immersion cycles | Irradiation UV light | Vacuum time |
| | Input | Output | | | |
| PLA | 1.10 | 0.45 | 2 | 30 s | 1 h |
| PCL | 1.10 | 0.45 | 2 | 1 min | 2.5 h |
| **PCL/NaCl** | **1.10** | **0.45** | **2** | **1:30 min** | **2.5 h** |
| **PCL/nHA** | **1.10** | **0.45** | **2** | **1:30 min** | **3 h** |
| **PCL/nHA/NaCl** | **1.10** | **1.20** | **3** | **1:30 min** | **3 h** |
| HIPS | 1.10 | 0.45 | 2 | 5 min | 8 h |
| TPU | 1.10 | 1.10 | 3 | 1 min | 2 h |

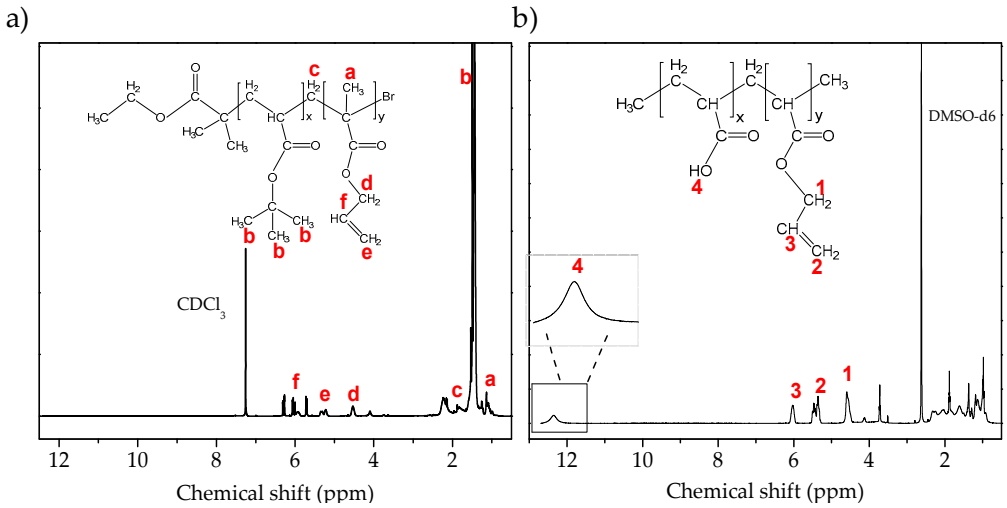


**Figure S1.** $^{1}$H-NMR and structure of the a) protected and b) unprotected copolymer in a mole ratio of 90:10.

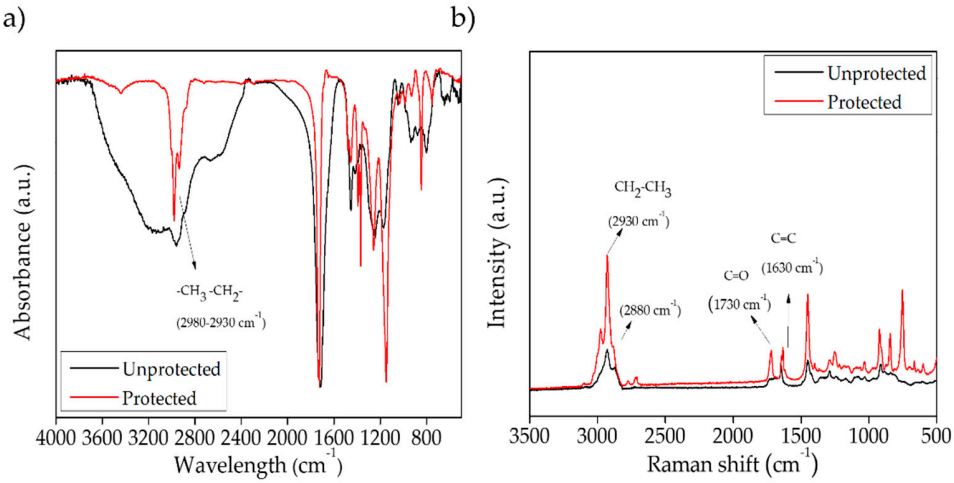


**Figure S2.** a) FT-IR, and b) Raman spectroscopy of unprotected and protected copolymers in a mole ratio of 90:10

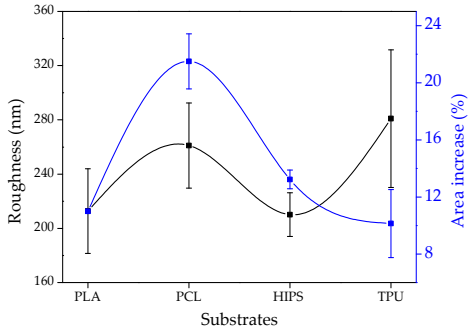


**Figure S3.** Graph roughness (line black) and area increase (line blue).

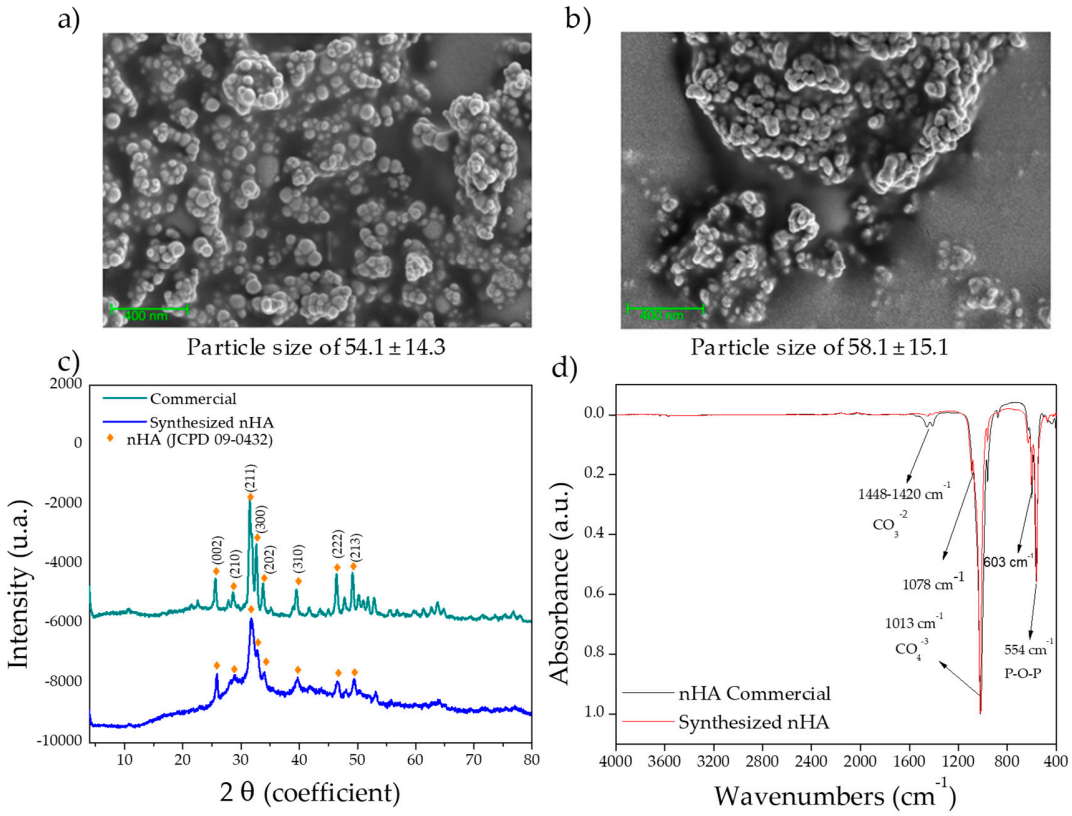


**Figure S4.** Analysis and characterization of synthesized and commercial nHA particles. a) FE-SEM commercial nHA. b) FE-SEM nHA synthesized. c) ATR-FTIR commercial nHA (line black) and synthesized (line red). d) Analysis XRD nHA commercial (line green) and synthesized (line blue).

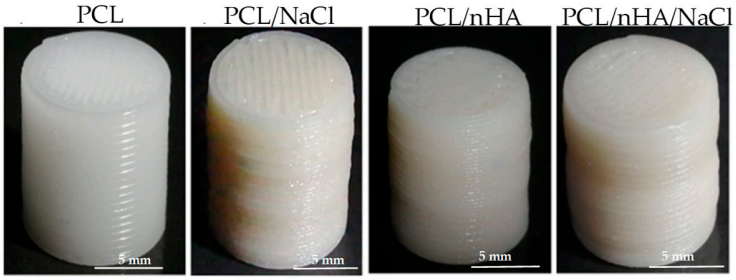


**Figure S5.** Different scaffolds printed in FDM.

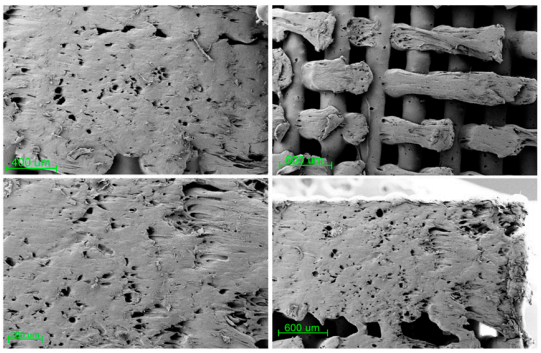

**Figure S6.** FE-SEM of the internal structure of the PCL/nHA/NaCl scaffolds with 14 days of leaching in different zones.

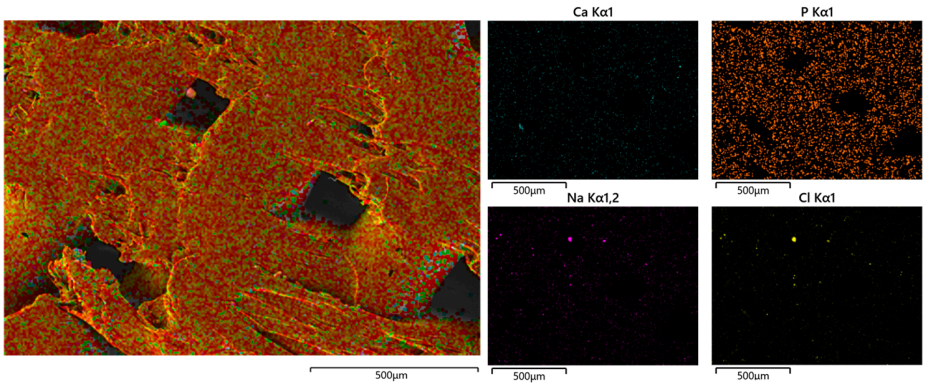


**Figure S7.** EDX measurements of the PCL/nHA/NaCl leached sample

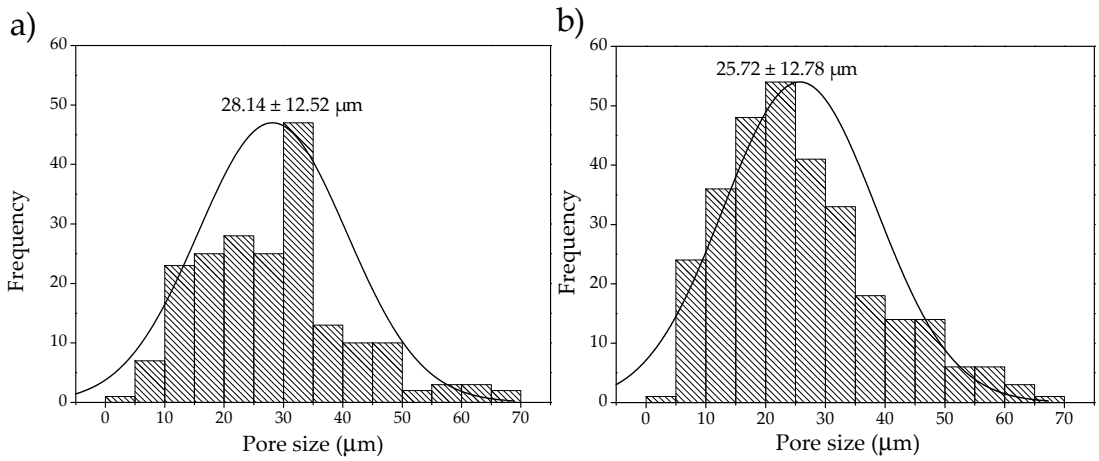


**Figure S8.** Histogram of pore size of the: a) PCL/NaCl and b) PCL/nHA/NaCl scaffolds.