

Supplementary

3D printed piezoelectric BaTiO₃/polyhydroxybutyrate nanocomposite scaffolds for bone tissue engineering

Giovanna Strangis ¹, Massimiliano Labardi ², Giuseppe Gallone ^{1,*}, Mario Milazzo ¹, Simone Capaccioli ^{2,3},
Francesca Forli ⁴, Patrizia Cinelli ^{1,2}, Stefano Berrettini ⁴, Maurizia Seggiani ¹, Serena Danti ^{1,2,†,*} and Paolo Parchi ^{5,†}

¹ Dept. of Civil and Industrial Engineering, University of Pisa, Largo L. Lazzarino 2, 56122 Pisa, Italy; giovanna.strangis@phd.unipi.it (G.S.); mario.milazzo@unipi.it (M.M.); patrizia.cinelli@unipi.it (P.C.); maurizia.seggiani@unipi.it (M.S.);

² Institute for Chemical and Physical Processes (IPCF), National Researches Council (CNR), Pisa Research Area, via Moruzzi 1, 56124 Pisa, Italy; labardi@df.unipi.it (M.L.);

³ Dept. of Physics “Enrico Fermi”, Largo Pontecorvo 3, 56127 Pisa, Italy; simone.capaccioli@unipi.it (S.C.);

⁴ Dept. of Surgical, Medical, Molecular Pathology and Emergency Medicine, University of Pisa, 56126 Pisa, Italy; francesca.forli@unipi.it (F.F.); s.berrettini@med.unipi.it (S.B.);

⁵ Dept. of Translational Research and New technologies in Medicine and Surgery, University of Pisa, Pisa, Italy; paolo.parchi@unipi.it (P.P.)

[†] These authors contributed equally to this work.

* Correspondence: giuseppe.gallone@unipi.it (G.G.); serena.danti@unipi.it (S.D.)

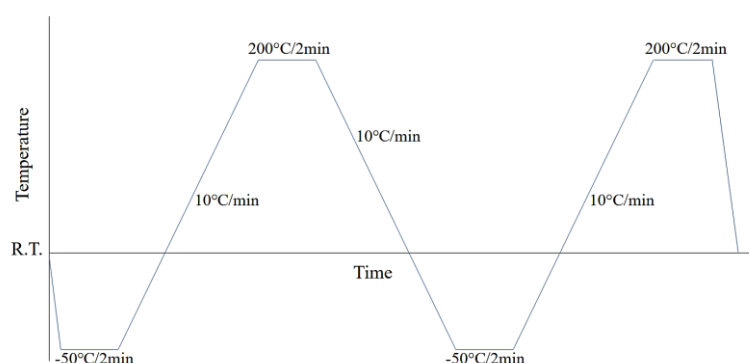


Figure S1. Thermal treatment program applied for all DSC measurements reported in present work.

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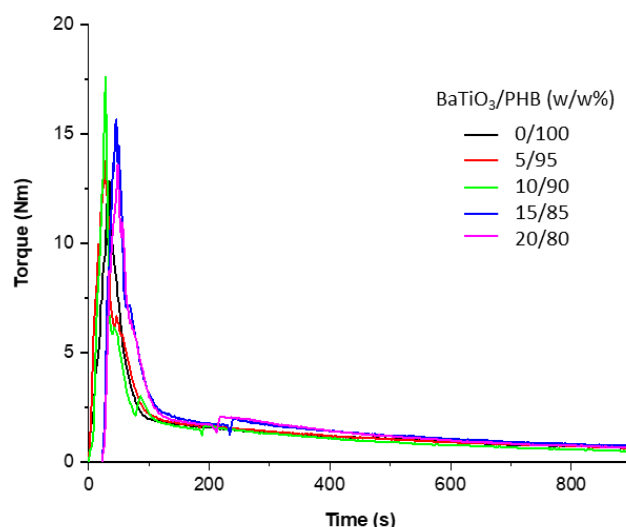


Figure S2. Torque vs. time during PHB and BaTiO₃/PHB nanocomposite mixing. The investigation of torque was carried out in a Brabender mixer in conjunction with the WinMix program, to know the mechanical and thermal effects.

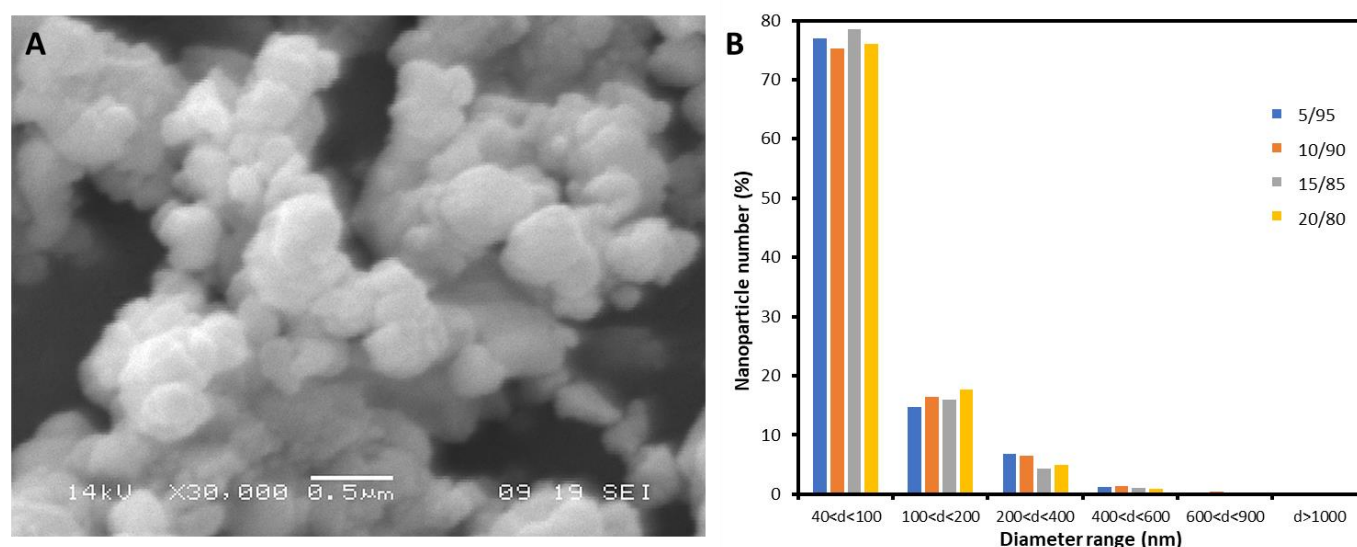


Figure S3. BaTiO₃ nanoparticles: (A) Scanning electron microscopy (SEM) micrographs of the particles as supplied; (B) Nanoparticle frequency (%) *vs* diameter range (nm), as detected at the surfaces of the different PHB BaTiO₃/PHB nanocomposites via SEM analysis, evaluated using ImageJ software.

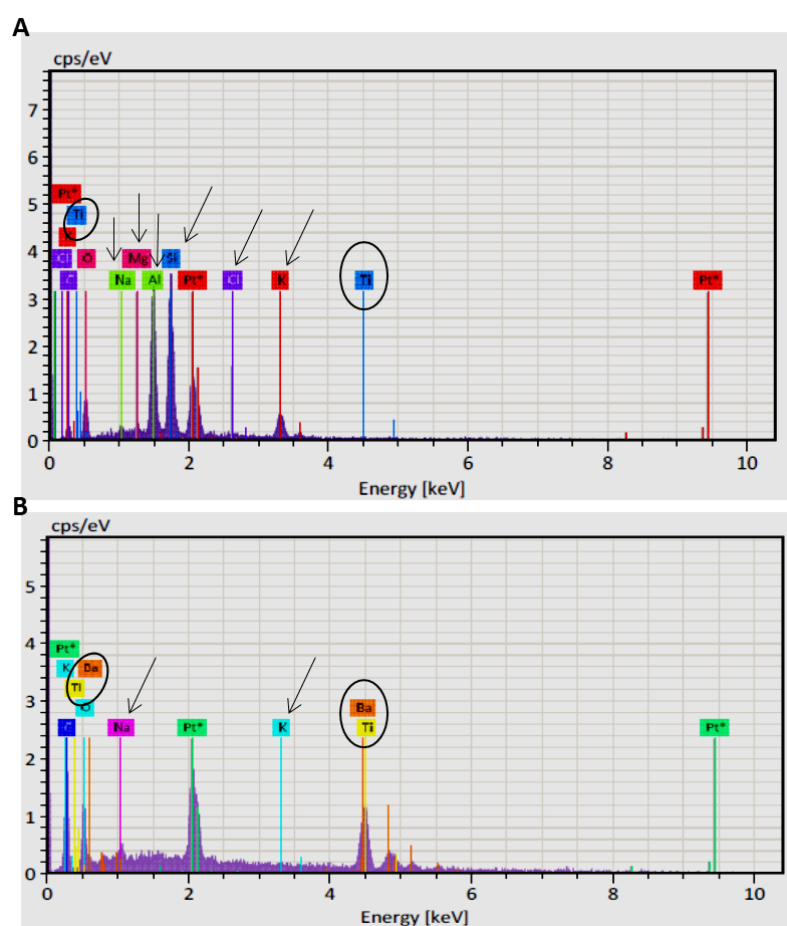


Figure S4. Elemental analysis (EDX) performed on: (A) 5/95 (w/w%) PHB BaTiO₃/PHB and 10/90 (w/w%) PHB BaTiO₃/PHB nanocomposites confirmed the presence of BaTiO₃ nanoparticles by the detection of Ba and Ti (circles), and also showed the presence of some impurities, like sodium, potassium, magnesium, aluminum and chlorine (arrows). * indicates the element (i.e., Pt) added for sputter coating the surface.

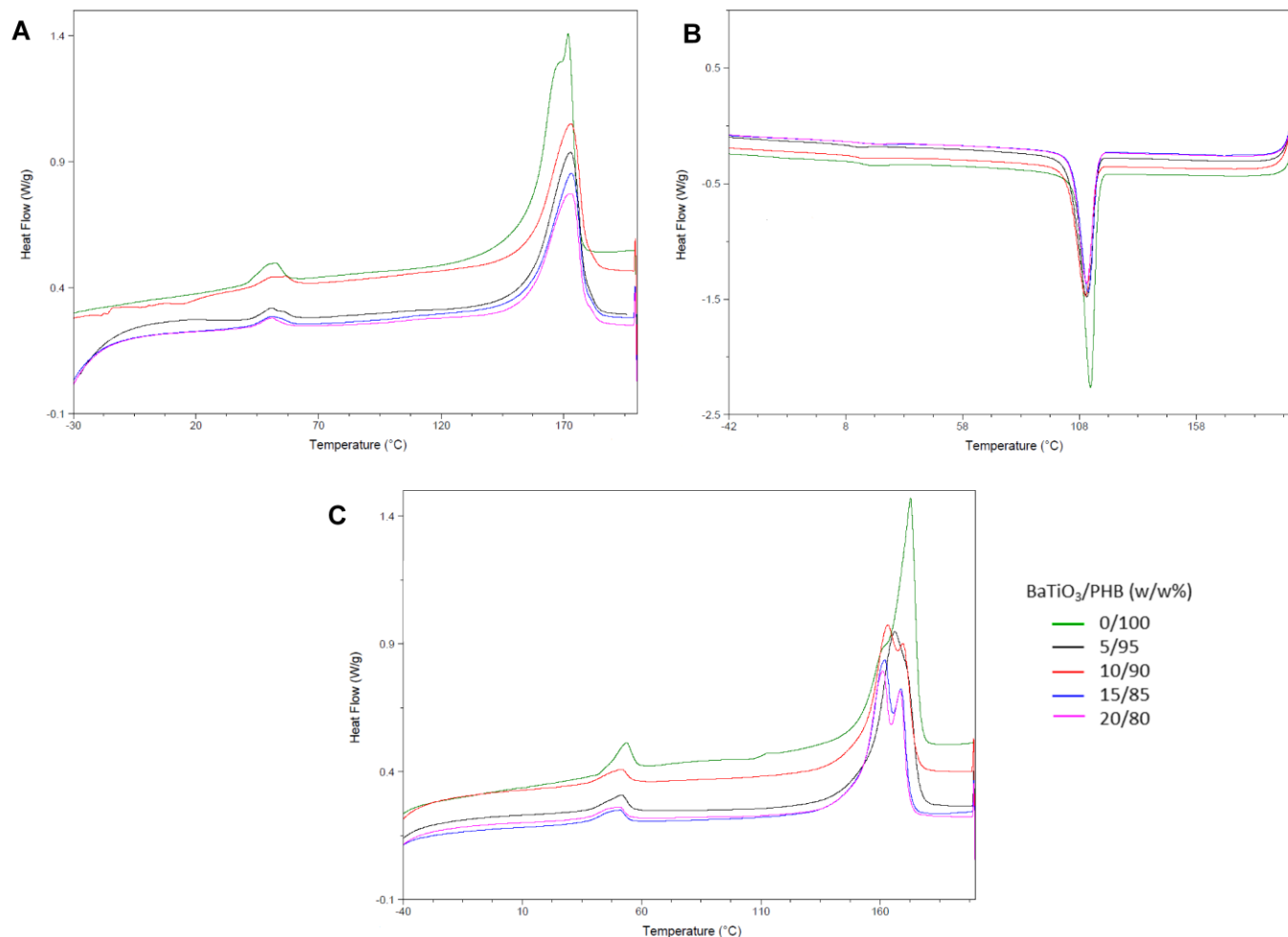


Figure S5. Differential scanning calorimetry (DSC) thermograms of PHB and BaTiO₃/PHB nanocomposites: (A) First heating; (B) Cooling; and (C) second heating curves.

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