Supplementary Information

Electrically conductive and mechanoactive scaffolds synergistically enhance osteogenic cell responses under mechanical stimulation

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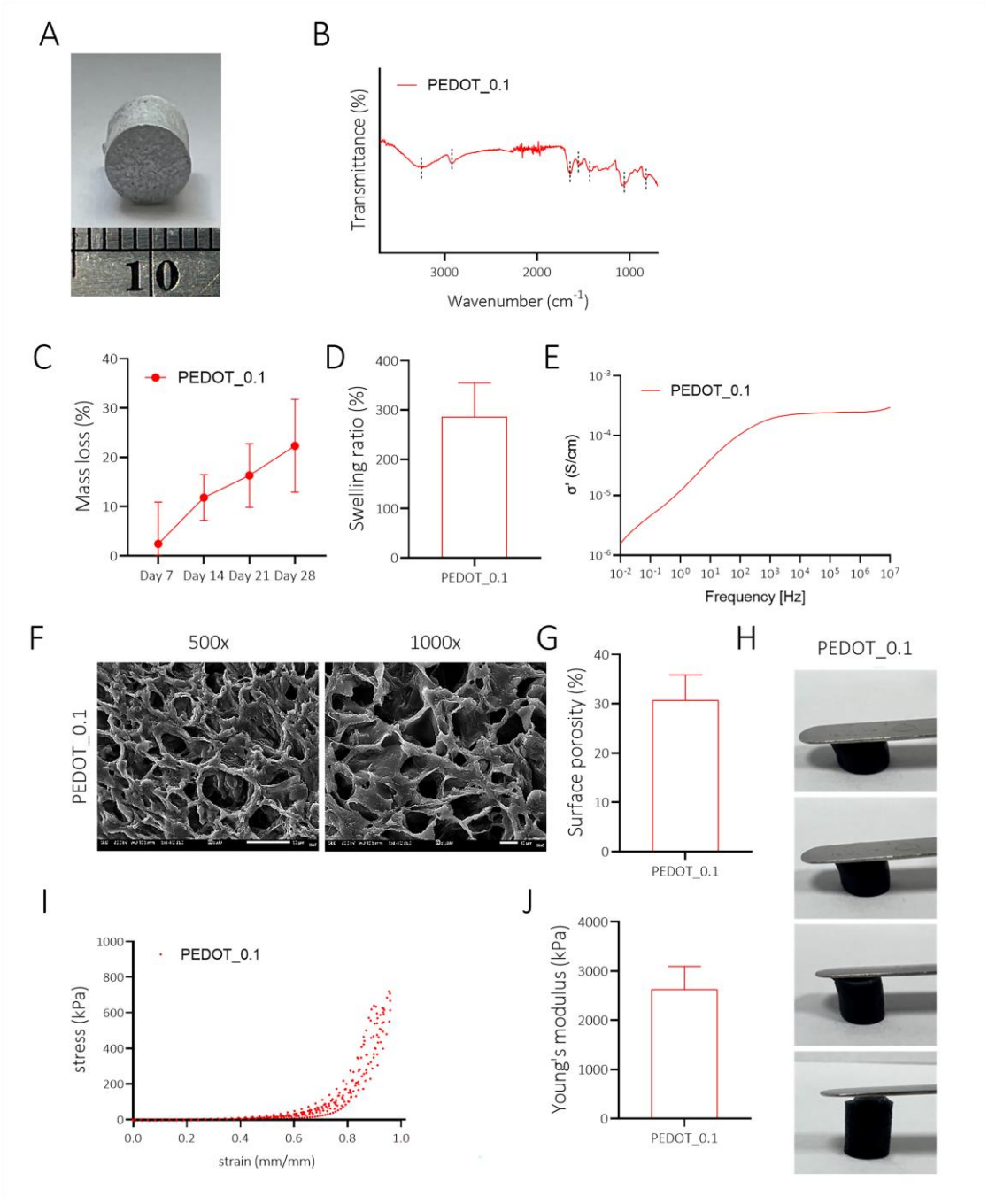

Figure S1. (A) Macroscopic view of freeze-dried PEDOT_0.1 scaffolds. (B) FTIR spectra of PEDOT_0.1 scaffold. (C) The % mass loss after 28 days in culture. (D) Swelling ratios of the lyophilized scaffolds after 3 h of immersion in PBS. (E) Evaluation of the scaffold electrical conductivity. (F) Surface porosity of both scaffold compositions depicted via SEM in two magnifications (500× upper panel, and 1000× lower panel; scale bars represent 50 μm and 10 μm respectively). (G) Evaluation of % surface porosity calculated via SEM images using ImageJ. (H) Macroscopic view of scaffolds when hydrated and manually compressed using a spatula. After compression, the scaffolds fully recovered retaining their initial shape (scale bar represents 4 mm). (I) Stress-strain curves after uniaxial compression using mechanical testing. (J) Evaluation of elastic modulus of the scaffolds at 60-90 % strain, at a velocity of 15 mm/s.

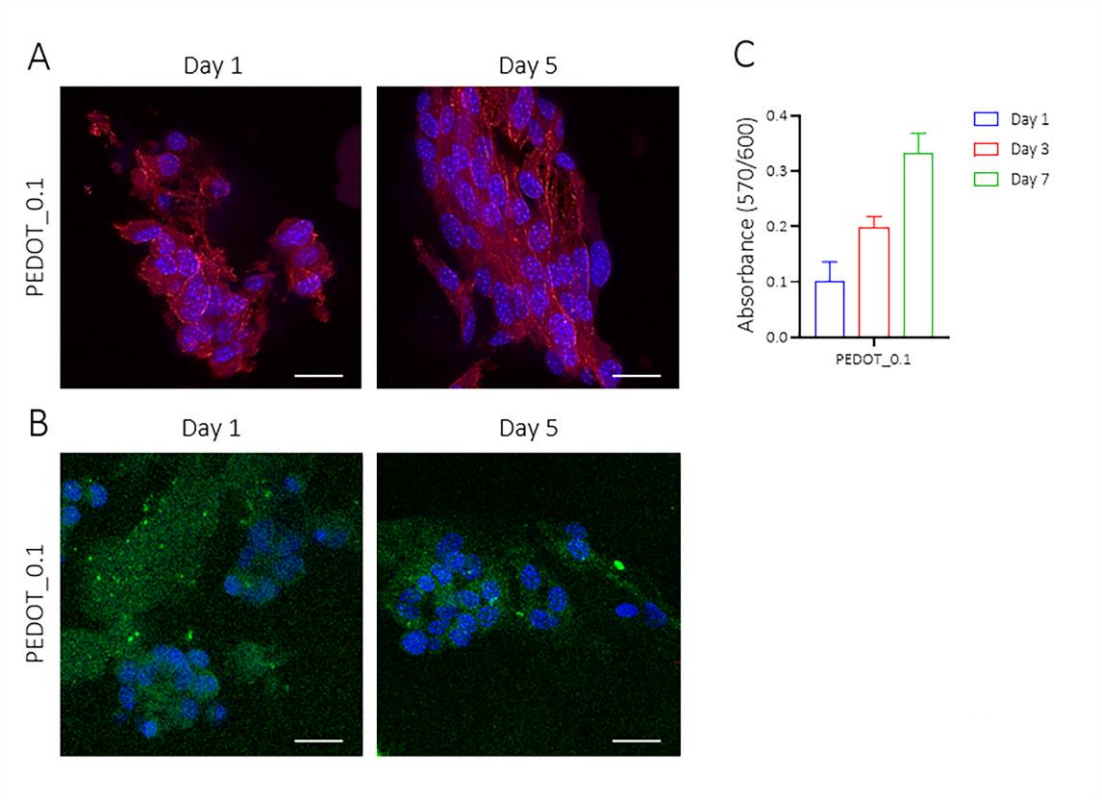

Figure S2. Phalloidin (red) staining showing the (A) actin cytoskeleton of pre-osteoblasts on PEDOT_0.1 scaffolds, (B) vinculin staining (green) indicating focal adhesion points, cell nuclei were stained with DAPI (blue) (scale bar represents 50 µm). (C) Metabolic activity of cells on days 1, 3, and 7.