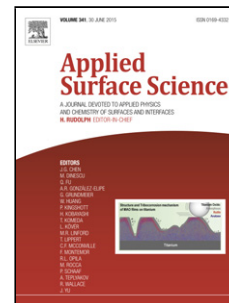


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Electrically responsive microstructured polypyrrole-polyurethane composites for stimulated osteogenesis

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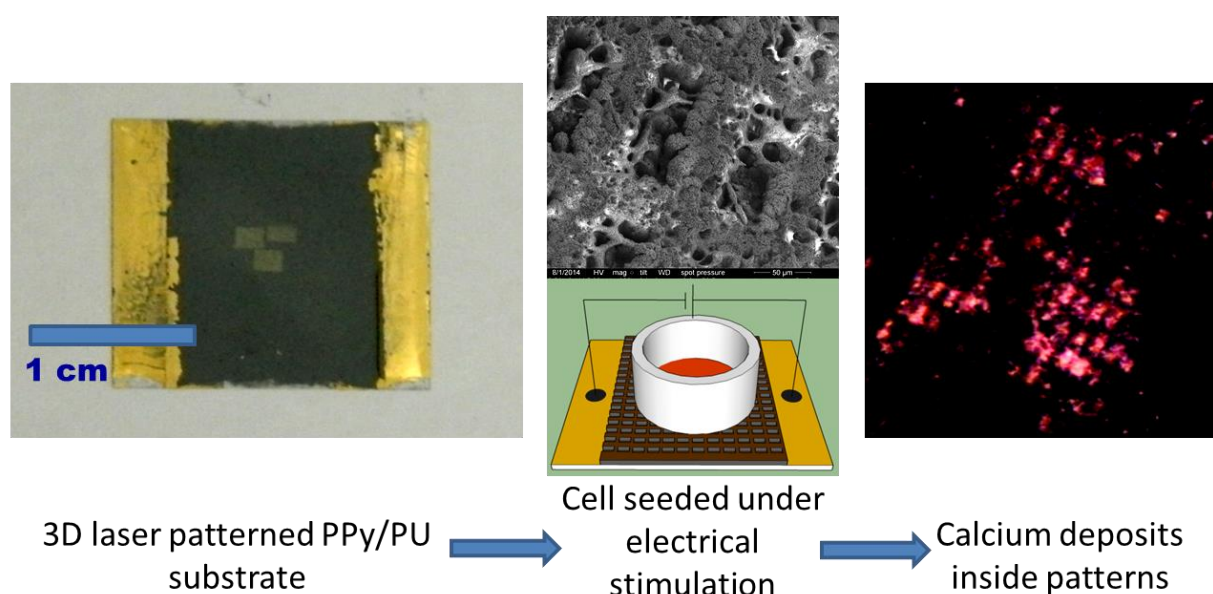
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Graphical abstract



Highlights

- Conductive PPy/PU blends with 3D patterns were obtained by laser-assisted techniques
- Guided osteoblast-like cells attachment in predefined 3D patterns
- Electrical stimulation of the cultured cells fastened the osteogenesis
- Calcium deposits were obtained inside 3D patterns

Abstract

In this work, we demonstrate the efficiency of substrate-mediated electrical stimulation of micropatterned polypyrrole/polyurethane (PPy/PU) composites for enhancing the osteogenesis in osteoblast-like cells. The PPy/PU substrates were obtained by dispersing electrically conductive PPy nanograins within a mechanically resistant PU matrix. Spin-coated PPy/PU

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