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## 3D imaging of cell interactions with nanofibers scaffolds

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The use of electrospun nanofibres for guided bone regeneration or bone scaffolds align with next-generation healthcare especially as electrospun nanofibres are highlighted as being particularly effective in tissue engineering. However, optimization of the electrospinning process for cell growth and their interaction with nanofibre surfaces is yet to be determined. We develop a biodegradable electrospun nanofibre membrane for guided bone regeneration for bone scaffold applications. The interaction between osteoblasts and osteoblast-derived mineralized nodule formation on the nanofibre membrane is visualized using 3D imaging based on 'slice-and-view'combinations of ion beam and scanning electron microscopy (FIB-SEM). The presented 3D imaging technique therefore shows a new approach in high resolution visualization the cell growth on electrospun nanofibers and potentially other biomaterials that will develop and design new biomaterials for a range of clinically important applications including orthopaedics of this work.

## Biography

Urszula Stachewicz is an Assistant Professor at AGH University of Science and Technology in Krakow, Poland. She is also working in the International Centre of Electron Microscopy for Materials Science. She received a Doctorate from Delft University of Technology in the Netherlands and completed her Postdoctoral study at the Queen Mary, University of London, UK. She worked in Philips Research Laboratories and the University spin-out company Nanoforce Technology Ltd. She is a peer reviewer for several funding agencies and journals and she is author of 20 peer reviewed publications.

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