

3D Printable Conducting Polymers for Bioelectronics

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Ionic and electronic conducting polymers are searched in the area of bioelectronics for the development of innovative medical devices. The design of artificial scaffolds and devices which interact with the human body relies on the ability to control the mechanical and electrical signals, together with the material composition, topography and biocompatibility. New medical devices such as bioresponsive electrodes, biosensors, electronic skin and neural or muscle regeneration show the need of new conductive materials that can be printed. In this presentation we will show the recent activities carried out within the IONBIKE RISE project (www.ionbike-rise.eu) towards the development of printable conducting polymers. The presentation will include different materials and additive manufacturing methods based on the use of light or temperature such as:

- 3D printing of supramolecular ionogels by Fused Deposition Modelling
- 3D printing of conducting PEDOT hydrogels by Stereolithography
- 3D printing of biodegradable and conducting PEDOT/PLA polymers by FFF

REFERENCES

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FIGURES

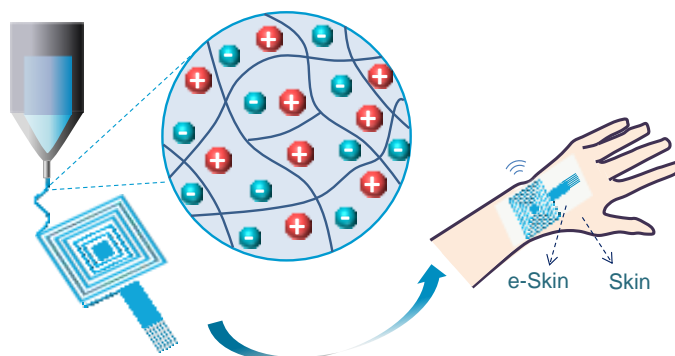


Figure 1: Schematic representation of printing of a conducting polymer for e-skin applications