

**Doctoral School of Information and Biomedical Technologies
Polish Academy of Sciences (TIB PAN)**

SUBJECT:

Development of the three-dimensional (3D) printed matrix loaded with hydrogel for cartilage regeneration

SUPERVISOR:

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DESCRIPTION:

Hybrids of three-dimensional (3D) printed polymeric structures combined with hydrogels are attractive from the perspective of regenerative medicine offering an optimal environment for cells together with the possibility of effective drugs delivery. The polymer printability is affected by several parameters like printing pressure, needle diameter, printing speed, flow rate, and printing temperature. 3D printed polymeric scaffold indicates required mechanical prosperities while hydrogel support effectively biological functions.

We plan investigations of hybrid polymer scaffolds composed of 3D printed polymer matrix releasing ionic crosslinking agent combined with a hydrogel which will be crosslinked. Such a system will be focused on cartilage applications.

BIBLIOGRAPHY:

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