

DEVELOPMENT OF 3D TYPE SCAFFOLDS WITH BIODEGRADABLE CO-POLYESTERS

Supervisor: Andrzej Chwojnowski, Prof.

Institute of Biocybernetics and Biomedical Engineering PAS

Department II

Laboratory of Semipermeable Membranes and Bioreactors

The aim of the work is to develop a method for obtaining spatial (3D) cell scaffolds from biodegradable polyesters for the purpose of chondrocytes cultures. Scaffolds are to be used for regeneration of cartilage defects in the joints, in the first place of the knee and hip.

For this purpose, the suitability of co-polyesters and ter-polyesters should be tested to obtain specific scaffold structures that provide the conditions necessary for the multiplication of chondrocytes and the production of a protein matrix by them. The structure assessment of the scaffolds obtained will be carried out by means of electron microscopy (SEM). The selected structures will be tested first for non-cytotoxicity. The selected non-cytotoxic scaffolds will be populated with human chondrocytes to check their suitability for cell cultures. Close cooperation with orthopedic doctors from the Medical Center of Postgraduate Education and doctors of the Warsaw Medical University is foreseen in the implementation of the work.