PRODUCING POROUS SCAFFOLDS FOR TISSUE ENGINEERING: AN ANALYSIS OF THREE DIFFERENT METHODS

Alan Saúl Alvarez-Suárez; Rodolfo Daniel Velasco-Barraza; Vareska Lucero Zárate-Córdoba; Luis Jesús Villarrreal-Gómez; Ana Leticia Iglesias; Eduardo Alberto López-Maldonado; Mercedes Teresita Oropeza-Guzmán

1Escuela de Ciencias de Ingeniería y Tecnología, Universidad Autónoma de Baja California, Valle de las Palmas, México. Blvd Universitario #1000, Unidad Valle de Las Palmas, 22260 Tijuana, B.C, 2Centro de Investigación y Desarrollo Tecnológico en Electroquímica S.C. –Tijuana

A commonly followed approach for producing engineered tissue consists of using scaffolds that provide mechanical support and act as a structure for the surrounding cells to migrate and grow. Porosity is an important parameter to consider when designing a scaffold for tissue engineering, this structure determines how the cells interact with the scaffold and provides the necessary surface features for cell attachment and mass-transport properties required for cell nutrition. This work demonstrates three different techniques for producing porous scaffolds with different morphologies and from a variety of different materials, which include polymers and ceramics. The first type of scaffolding structure was achieved via the electrospinning technique, a method that produces porous polymeric nanofibrous mats with suitable characteristics for being used as a scaffold for regenerating soft and some hard tissues; this procedure yielded randomly aligned nanofibers from various polymers with average fiber diameter ranging from

**Keywords:** Applied materials, tissue engineering, porous scaffold

**References:**


**Presenting author’s email:** aalvarez33@uabc.edu.mx