Abstract Submitted
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Study on fabrication of scaffold using three-dimensional electro-hydrodynamic ink-jet technique[1] HAN SEO KO, SOO-HONG LEE, PIL-HO LEE, DAE-HOON KIM, CHIANG WEI YU, SANG WON LEE, Sungkyunkwan University — The EHD ink-jet technique uses the electrostatic force by applied voltage between a nozzle and an electrode to fabricate a three-dimensional scaffold by accumulating layers. In this study, a PLA (Polylactide) which is a polymer material was used to make the biodegradable scaffold. The experiment was performed by various inks with different solvent ratios because the layer thickness and width on the substrate are influenced by the ink properties such as the solvent ratio and boiling point. The cone-jet mode which looks cone-shaped on the meniscus was used for the EHD jetting by various stage velocities and solvent ratios of the PCL material. The micro-zoom lens and the LED lamp were used to visualize the jetting performance. The three-dimensional printing was completed by the movement of the stages using the Gentry structure. The optimum condition was selected for the fabrication of the scaffold after investigating the width of the pattern and the thickness of the multiple layers.

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