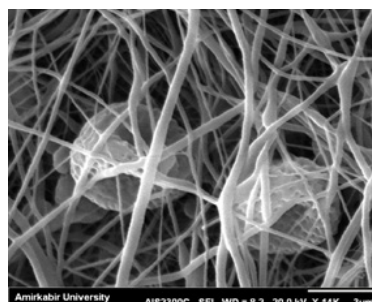


## An investigation into curcumin release from PLA particles loaded in PCL gelatin fibers for skin application

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For large or chronic wounds, fibroblast cell migration to the wound area is limited. In this case some electro spun Nanofibers matrices are evolved to be planted there. Our main focus in this study is to prepare a polycaprolactone/gelatin (PCL/GEL (2:1)) electro spun skin scaffold in which curcumin loaded polylacticacid (PLA)ss micro particles were electro sprayed among nanofibers in order to accelerate cell proliferation and help wound healing. Electrospinning nanofibers provide quite porous structure and it resemble extra cellular matrix (ECM). Curcumin was used for treating wound for thousand years especially in eastern countries due to its uncountable properties such as anti-oxidant, anti-inflammatory, also triggering the growth factors release for cell proliferation and etc.[1]. Here, 4 different (5-2.5-1.25-0.625 mg) curcumin concentration loaded PLA micro particles were used. SEM images showed a bead free mat in which average diameter was 600 nanometer. Mechanical test of the scaffold demonstrated a great resemblance to original skin mechanical properties. MTT assay was done and showed cell viability in 5 days. In vitro drug release was measured and after 7 days controlled drug release was seen. At the end, it is concluded that the designed skin scaffold has much similarities to original skin and it accelerates wound healing process.



**Figure 1:** electrospun PCL/GEL nanofibers and electro sprayed curcumin loaded PLA micro particles among them.

### Biography

Misagh Saadipour has graduated from Tehran University for his bachelor degree, he started his Master at Amirkabir University of Tehran 3 years ago and he still is a master student. He has worked on many projects from review to experimental. He is looking forward for continuing his education for PhD.