

7th International Conference on

Smart Materials and Structures

July 02-03, 2018 | Vienna, Austria

PVA/chito-oligosaccharide nanofiber mat containing pomegranate peel crude extract for antibacterial purpose

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Pomegranate peel crude extract was previously studied on its variety of good properties, especially antibacterial activity and wound healing. Fabricated as nanofiber, it governed several good characteristics such as high surface area/volume ratio, high porosity and completely releasing drug or crude extract, etc. In this study, crude extract of pomegranate peel was mixed with PVA/chito-oligosaccharide (20:1 v/v) solution and fabricated into nanofiber using electrospinning technique. Electrospinning parameters, i.e., applied voltage, working distance, and collecting time were studied to obtain the suitable nanofiber matrix for crude extract delivery. Nanofibers were collected from within nanofiber mats and further cross-linked with glutaraldehyde vapor to structure stabilization. The results showed that nanofiber mat can be fabricated using 15–25 KV, at a distance of 20 cm, for five hours. SEM displayed the nanofiber style with/without some beads. PVA/chito-oligosaccharide nanofiber mat with crude extract of pomegranate peel can be expected to be used in different purposes as antibacterial wound dressing, or membrane for bacterial or viral filter.

Recent Publications:

1. Choochaisangrat T, Powduang T, Kuanchertchoo N, and Kashima D P (2015) Effect of crystallinity of hydroxyapatite nanoparticles prepared from bovine bone on adsorption of ammonium gas. *Key Engineering Materials* 659:289–293.
2. Kunnakorn D, Rirksomboon T, Siemanond K, Aungkavattana P, Kuanchertchoo N, et al. (2013) Techno-economic comparison of energy usage between azeotropic distillation and hybrid system for water–ethanol separation. *Renewable Energy* 51:310–316.
3. K-hasuwan P, Kuanchertchoo N, Wetprasit N and Supaphol P (2012) Mesoporous hydroxyapatite /ovalbumin heterocomplex particles: synthesis and characterization. *Materials Science and Engineering C* 32:758–762..

Biography

Neeranut Kuanchertchoo has her expertise in design and development of new matrix, accommodating for adsorption or drug delivery purpose. Her laboratory skill lay in synthesis, fabrication and materials modification suitable for variety applications. She is still teaching and working in laboratory.

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