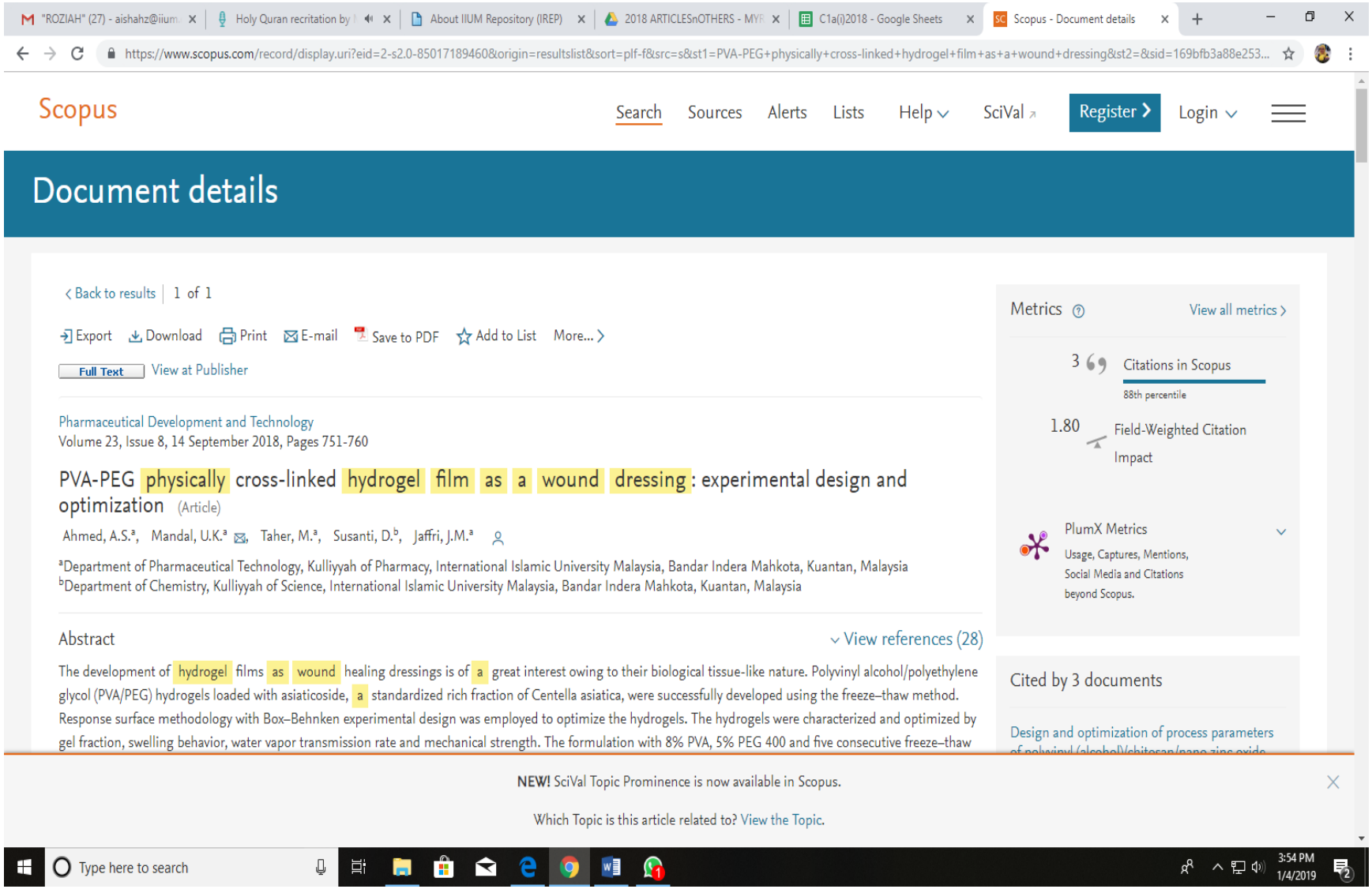
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Pharmaceutical Development and Technology
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PVA-PEG physically cross-linked hydrogel film as a wound dressing: experimental design and optimization (Article)
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Abstract
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The development of hydrogel films as wound healing dressings is of a great interest owing to their biological tissue-like nature. Polyvinyl alcohol/polyethylene glycol (PVA/PEG) hydrogels loaded with asiaticoside, a standardized rich fraction of Centella asiatica, were successfully developed using the freeze–thaw method. Response surface methodology with Box–Behnken experimental design was employed to optimize the hydrogels. The hydrogels were characterized and optimized by gel fraction, swelling behavior, water vapor transmission rate and mechanical strength. The formulation with 8% PVA, 5% PEG 400 and five consecutive freeze–thaw
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Article | biocompatibility | blood rheology | cell culture | Centella asiatica | cross linking | cytotoxicity | drug release | experimental design | freeze thawing | hydrogel | microbial growth | physical chemistry | priority journal | process optimization | response surface method | viscoelasticity | water vapor | bandage | cell line | chemistry | drug delivery system | flow kinetics | freezing | human | hydrogel | tensile strength

MeSH:

Anti-Infective Agents | Bandages | Biocompatible Materials | Cell Line | Drug Delivery Systems | Drug Liberation | Freezing | Humans | Hydrogels | Polyethylene Glycols | Polyvinyl Alcohol | Rheology | Tensile Strength | Triterpenes

Chemicals and CAS Registry Numbers:

macrogol, 25322-68-3; polyvinyl alcohol, 37380-95-3, 9002-89-5; asiaticoside, 16830-15-2;

Anti-Infective Agents; asiaticoside; Biocompatible Materials; Hydrogels; polyethylene glycol 400; Polyethylene Glycols; Polyvinyl Alcohol; Triterpenes

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