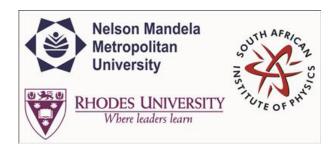Contribution ID: **32**   Type: **Oral Presentation**

Gum ghatti-based poly(acrylic acid-aniline) IPN hydrogel: Characterization and release properties

Thursday, 2 July 2015 16:10 (20 minutes)

**Abstract content
   (Max 300 words)
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In this work, the development of a biodegradable hydrogel based on interpenetrating network was carried out as a result of radical polymerization of aniline in a hydrogel matrix based on the Gum ghatti (Gg) and acrylic acid (AA). The graft copolymer based on Gg and AA was synthesized by grafting of poly(AA) chains onto Gg backbone using N,N'-methylene-bis-acrylamide and potassium persulphate as a crosslinker-initiator system. The characterization of the crosslinked hydrogels has been carried out by Time of flight secondary ion mass spectroscopy, Fourier transform infrared, X-ray diffraction and thermogravimetric analysis. The biodegradation of the crosslinked hydrogels was analysed using the composting soil method for a period of two months. The initial and final weight of the crosslinked hydrogels were compared as well as the percentage degradation was calculated. The ability of the synthesized hydrogels to be used as a colon-specific drug delivery system was performed at various pH using amoxicillin trihydrate as a model drug. The crosslinked hydrogel with the maximum percentage swelling was found to exhibit maximum drug absorption. Release of amoxicillin trihydrate from synthesized hydrogels was studied and evaluated kinetically.

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