

Gamma Irradiated Viscose and Viscose/PET Nonwoven Blended Fabrics Treated with Chitosan and Their Use as CO/CO₂ Gas Capturing Filter

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Received December 26, 2011; Accepted March 13, 2012

Abstract: Chitosan is used to treat cellulosic fabrics (i.e. cotton as well as Viscose) to give the fabric antibacterial activity towards gram positive and gram negative bacteria. Blending Viscose with PET gives them combined properties which encourage their use more than each separate fabric. Viscose and Viscose/PET (50/50) non-woven fabrics were subjected to γ - radiation using different doses 70,100,150 and 200 Gy then treated with chitosan at different concentrations 0.5, 1.0, 1.5 and 2% (o.w.f), using pad-dry-cure technique. The produced fabrics were tested for antibacterial activity using gram negative (*Escherichia Coli*) and gram positive (*Staphylococcus aureus*) bacteria. Also, the treated fabrics were tested as green house gas capture fabric system using streams of CO and CO₂ gases and the penetrated amount of each gas was determined quantitatively.

Keywords: *Chitosan, Viscose, Viscose/PET blend, γ - irradiation, antibacterial finishing, Green house gas.*

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