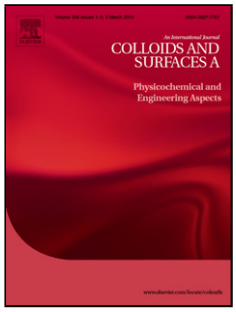
Accepted Manuscript



Title: Surface modification of PET fabric through *in-situ* reduction and cross-linking of graphene oxide: Towards developing durable conductive fabric coatings

Authors: Vahid Babaahmadi, Majid Montazer, Wei Gao

PII: S0927-7757(18)30094-3
DOI: https://doi.org/10.1016/j.colsurfa.2018.02.018
Reference: COLSUA 22270

To appear in: *Colloids and Surfaces A: Physicochem. Eng. Aspects*

Received date: 9-12-2017
Revised date: 8-2-2018
Accepted date: 8-2-2018

Please cite this article as: Babaahmadi V, Montazer M, Gao W, Surface modification of PET fabric through *in-situ* reduction and cross-linking of graphene oxide: Towards developing durable conductive fabric coatings, *Colloids and Surfaces A: Physicochemical and Engineering Aspects* (2010), https://doi.org/10.1016/j.colsurfa.2018.02.018

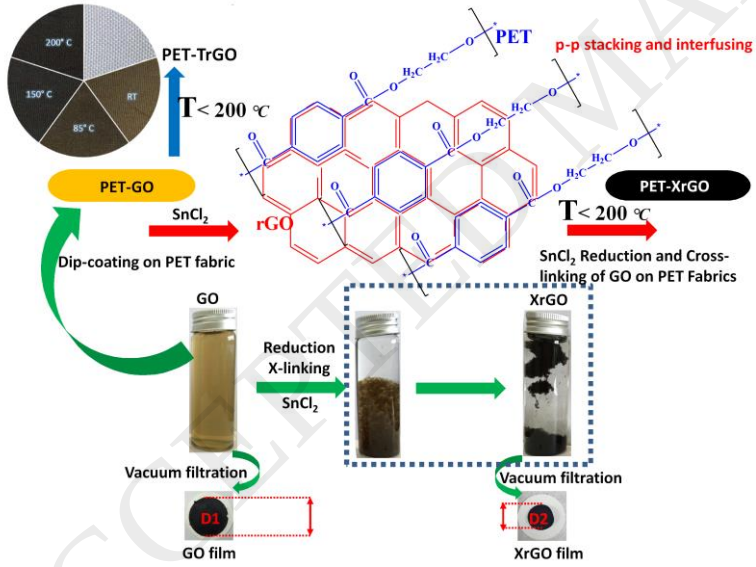
Surface modification of PET fabric through *in-situ* reduction and cross-linking of graphene oxide: Towards developing durable conductive fabric coatings

Vahid Babaahmadi[a,b], Majid Montazer[a,*] and Wei Gao[b,*]

[1] *Textile Department, Functional Fibrous Structures & Environmental Enhancement (FFSEE), Amirkabir University of Technology, Tehran, Iran*
[2]*Textile Engineering, Chemistry and Science Department, North Carolina State University, Raleigh, NC, USA*

Corresponding authors:
[*]tex5mm@aut.ac.ir (Majid Montazer), Tel. +98 21 64542657
*wgao5@ncsu.edu (Wei Gao), Tel. +1 919-515-0257

Graphical abstract



Abstract

A durable electro-conductive polyethylene terephthalate (PET) fabric has been fabricated via reduction and cross-linking of graphene oxide (GO) with $SnCl_2$. The stannous ions (Sn^{2+}) reduce GO and generate multilayer cross-linked and reduced graphene oxide (XrGO) coatings on PET fabric surfaces. In addition to the chemical treatments, thermal annealing was also used