

Electronic Supplementary Information (ESI)

**Silanization induced inherent strain in graphene based filler  
influencing mechanical properties of polycarbonate urethane  
nanocomposite membranes**

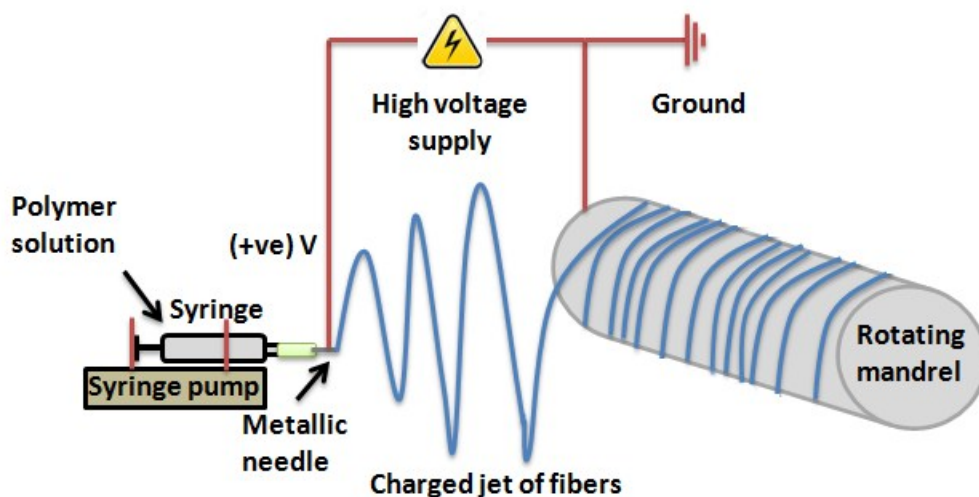
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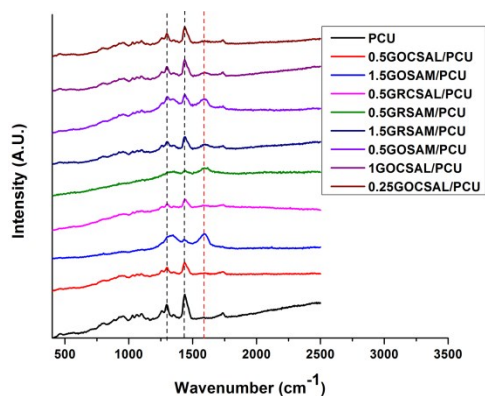
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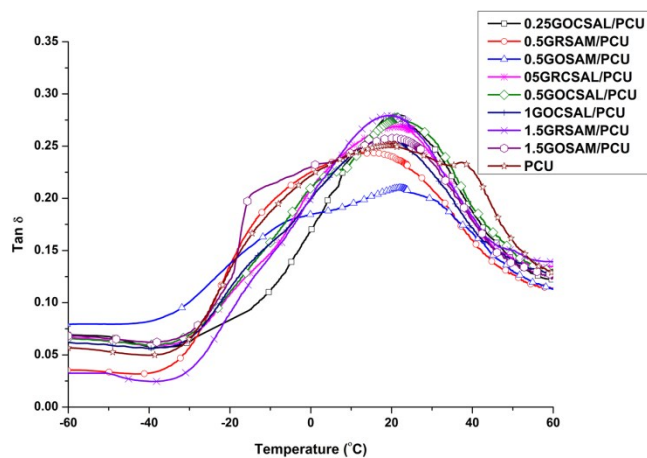
**Fig. S1** Schematic of electrospinning process.



**Fig. S2** Raman spectra of nanocomposite membranes, black vertical line indicate characteristic peaks of PCU and red indicates G peak of fillers.

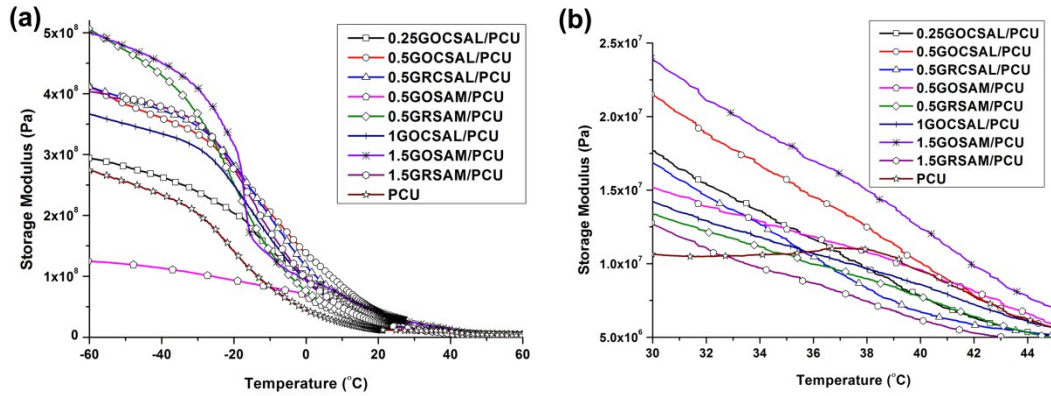
**Note:** There were no shifts observed in characteristic peaks of PCU in the nanocomposite membranes, while G peak of fillers under detectable volume could be seen in some of the spectra.

### Tan $\delta$



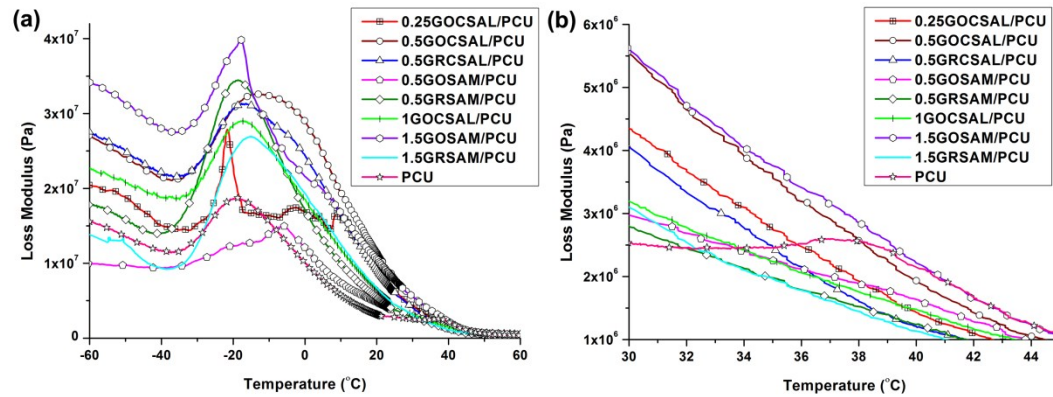
**Fig. S3** Tan  $\delta$  plots of PCU and nanocomposite membranes.

## Storage Modulus



**Fig. S4** Storage Modulus plot of PCU and nanocomposite membranes for temperature range (a) -60°C to 60°C and (b) zoom view 30°C to 45°C.

## Loss Modulus



**Fig. S5** Loss Modulus ( $E''$ ) plot of PCU and nanocomposite membranes for temperature range (a) -60°C to 60°C and (b) zoom view 30°C to 45°C.