Electronic Supplementary Material (ESI) for RSC Advances


*Electronic Supplementary Information*

# Solvent responsive healing of guar gum and guar gum-multiwalled carbon nanotube nanocomposite gels prepared in an ionic liquid

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***Fig. S1*** Healing of 5% w/v guar gum gel in BmimCl

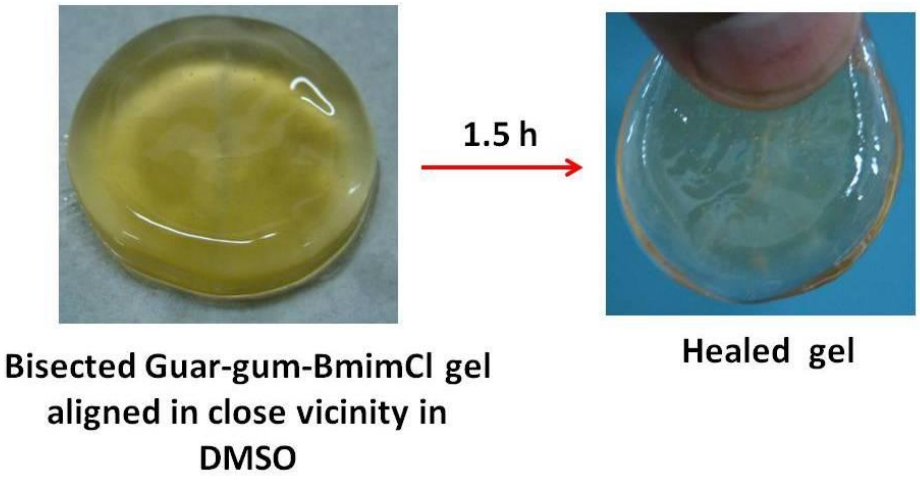


***Fig. S2*** Healing of 10% w/v guar gum-BmimCl gel in DMSO

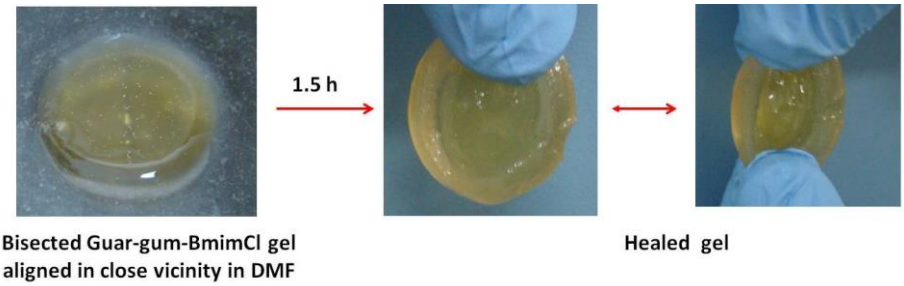


***Fig. S3*** Healing of 10% w/v guar gum-BmimCl gel in DMF

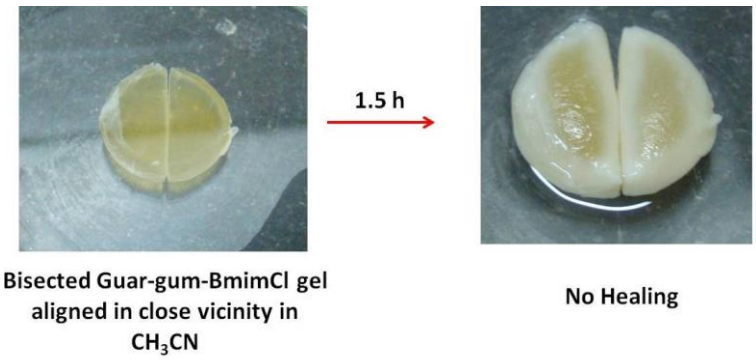


***Fig. S4*** Healing of 10% w/v guar gum-BmimCl gel in Acetonitrile.

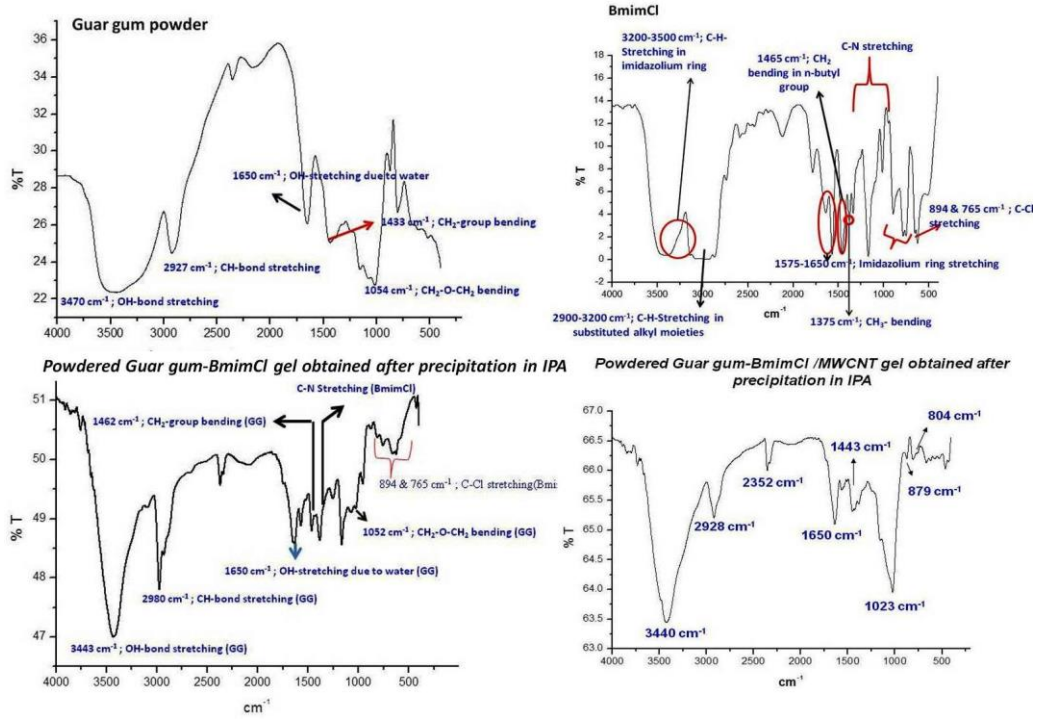


***Fig. S5*** FT-IR spectra of pristine guar gum powder, pure BmimCl, powdered guar gum-BmimCl gel obtained after precipitation in iso propyl alocohol and powdered guar gum-BmimCl /MWCNT NC gel obtained after precipitation in iso propyl alocohol

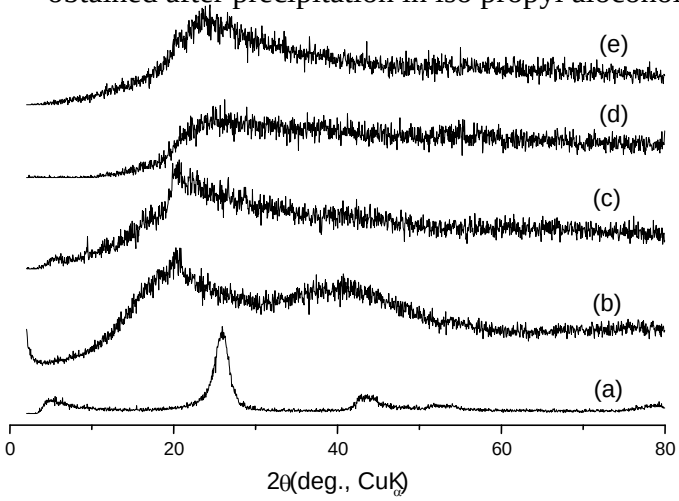


***Fig. S6***- Powder XRD of (a) MWCNT (b) Guar gum powder (c) Guar gum-BmimCl /MWCNT dry composite (d) Guar gum-BmimCl ionic gel and (e) Guar gum-BmimCl/MWCNT NC ionic gel.

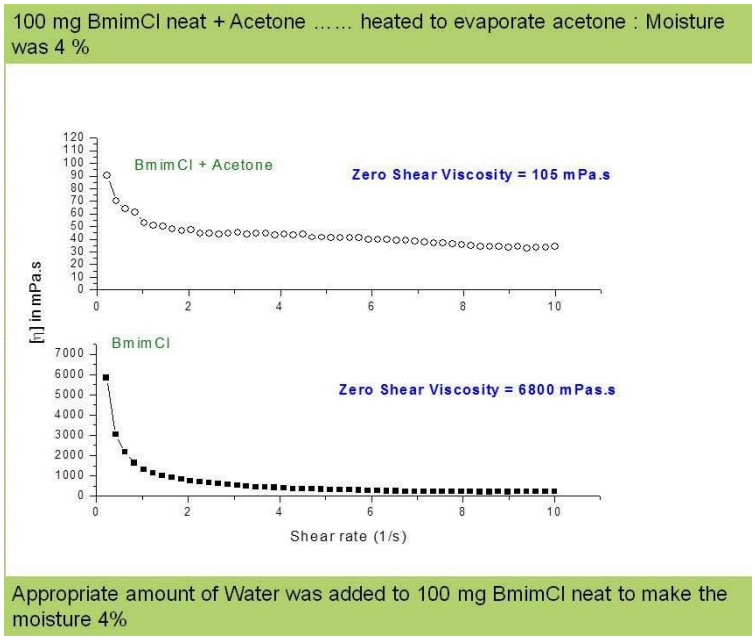


***Fig. S7***. Measurement of zero shear viscosity of BmimCl before and after interaction with acetone.

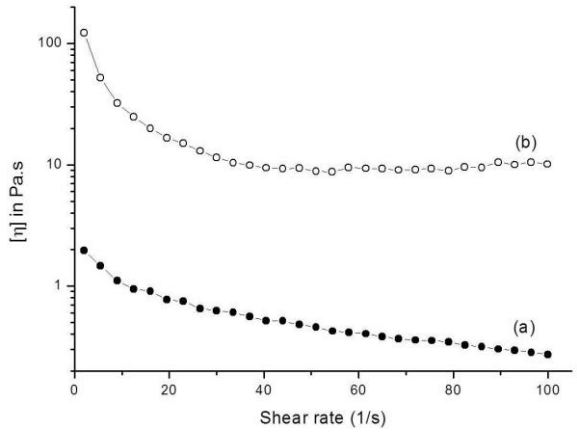


***Fig. S8***– Shear viscosity of (a) Guar gum-BmimCl and (b) Guar-gum-BmimCl /MWCNT NC gel before healing.

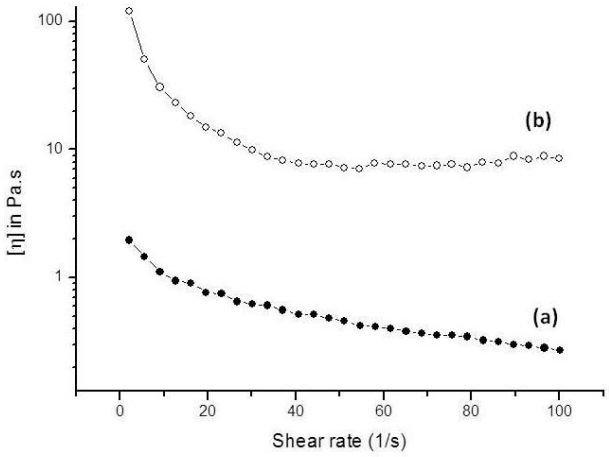


***Fig. S9***– Shear viscosity of (a) Guar gum-BmimCl and (b) Guar-gum-BmimCl /MWCNT NC gel after healing.

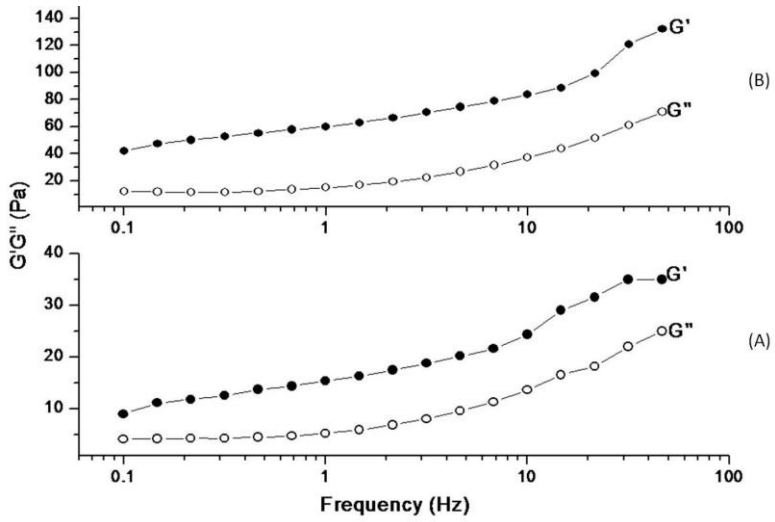


***Fig. S10***– Evaluation of viscoselastic properties with respect to frequency for (A) Guar-gum-BmimCl and (B) Guar-gum-BmimCl /MWCNT NC gel.