

Electronic Supporting Information (ESI)

Stable Functionalized Graphene Oxide – Cellulose
Nanofiber Solid Electrolytes with Long-range 1D/2D
Ionic Nanochannels

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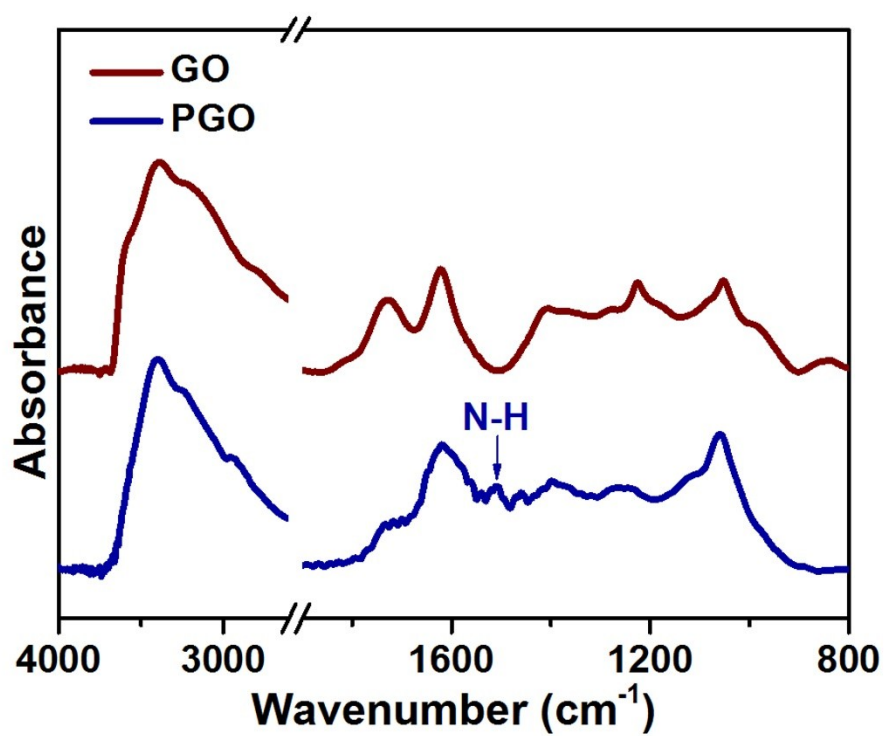


Fig. S1 FTIR spectra of GO and PGO.

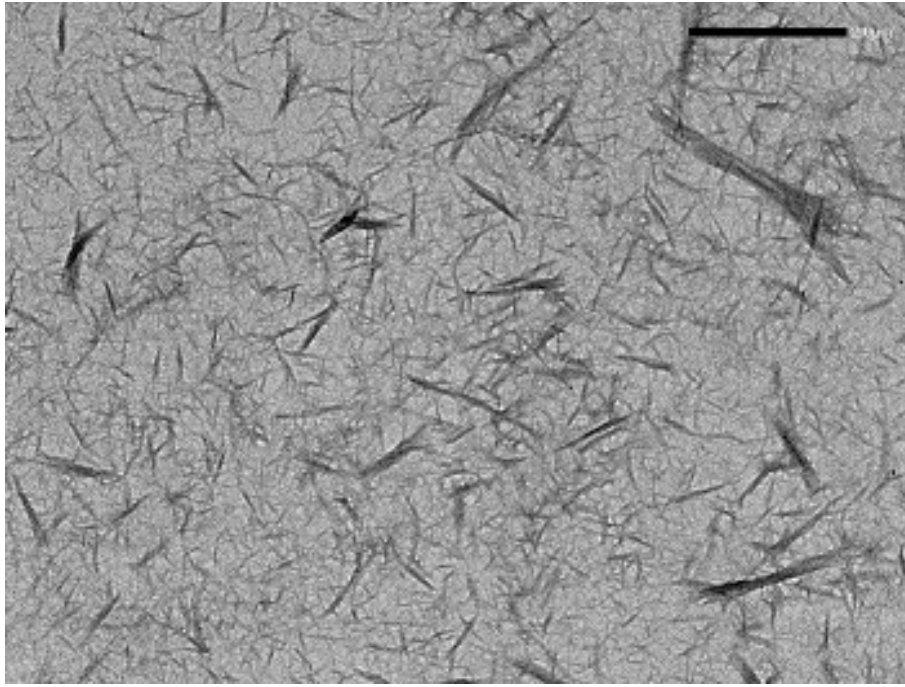


Fig. S2 The TEM image of CNF. The length of the scale bar is 2 μm .

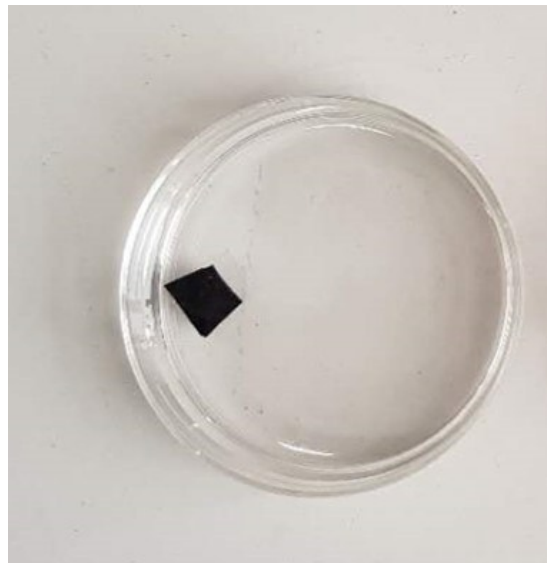


Fig. S3 The digital photo of NPGOM-10-CNF after immersing in water for two weeks.

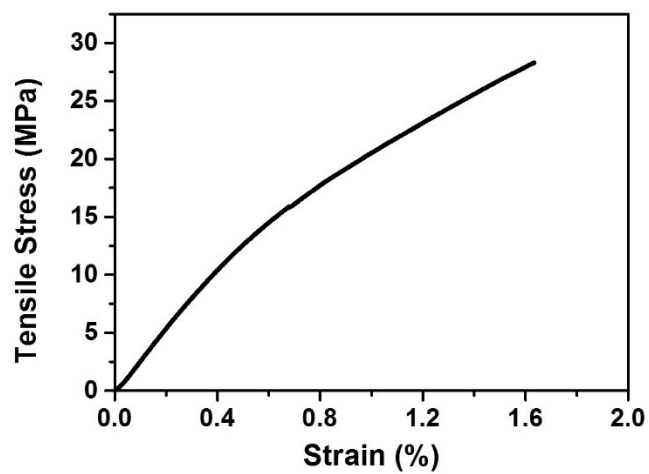


Fig. S4 The stress-strain curve of NPGOM-10-CNF.

Table S1 Comparison of transport properties of NPGOM-10-CNF with the previously reported membranes.

PEMs	Proton		Methanol		Reference
	Conductivity (S·cm ⁻¹)	Conditions	Permeability (cm ² ·s ⁻¹)	Condition	
NPGOM-10-CNF	0.13	100 °C-40% RH	8.8E-09	40 °C (80 v/v% methanol/H ₂ O solution)	This work
srNPGOM	0.04	100 °C-40% RH	2.0E-09	40 °C (80 v/v% methanol/H ₂ O solution)	1
GO/MMT/SPVA	0.02	80 °C-40% RH	-	-	2
P-GOM	0.032	80 °C-51% RH	4.3E-07	30 °C	3
Ozonated GO film	3E-04	30 °C-40% RH	-	-	4
Nafion212- PDDA-GO	-	-	63% decrease	2M methanol solution	5
SGO-surface coating Nafion	0.18	80 °C in water	1.3E-07	30 °C	6
PDA@Nafion117	0.07	Room temperature in water	6.5E-07	(2M methanol solution)	7
CNFM	1E-04	30 °C-40% RH	-	-	8
Electrospun BSA membrane	3E-04	35 °C in water	-	-	9

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