

Electronic Supplementary Information (ESI)

The Co-operative Performance of Hydrated Salt Assisted Sponge like P(VDF-HFP) Piezoelectric Generator: An Effective Piezoelectric Based Energy Harvester

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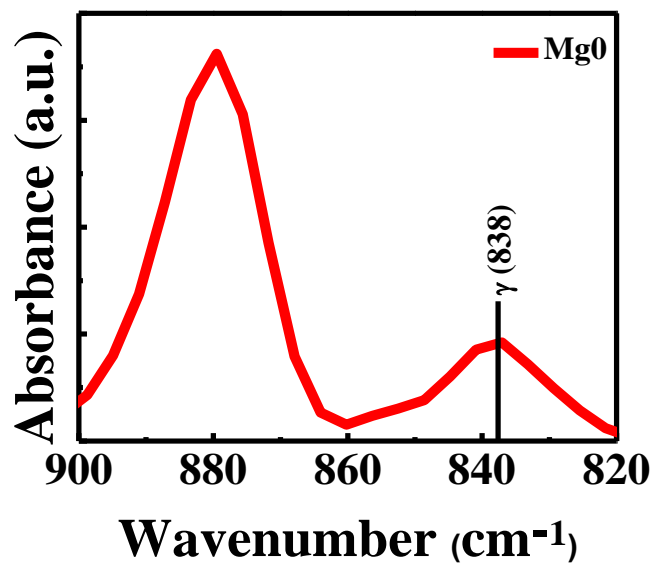


Fig. S1 FT-IR spectra of Mg₀ film from 900-820 cm⁻¹.

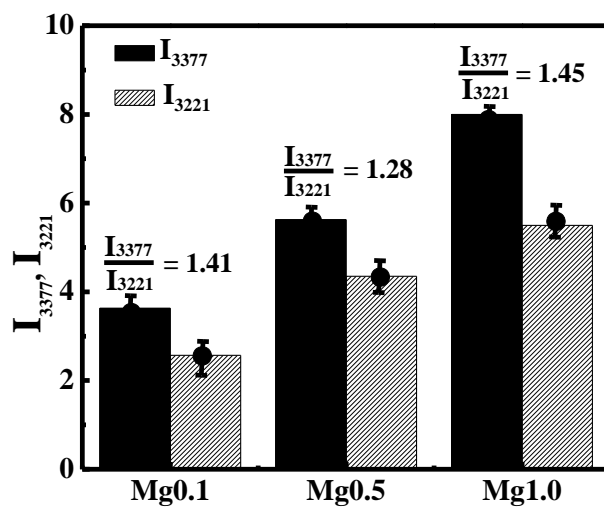


Fig. S2 Intensities of peak at 3377 cm⁻¹ and 3221 cm⁻¹ changes with increasing Mg-salt concentration. The corresponding intensity ratios are shown in the inset.

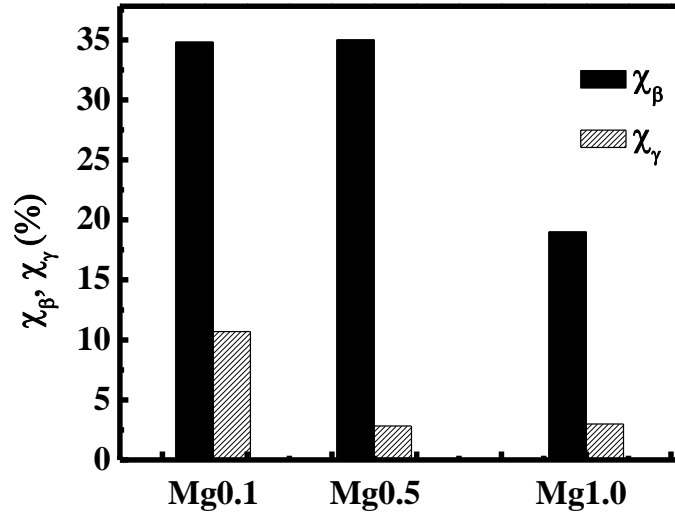


Fig. S3 Degree of β - and γ - crystallinity[‡] for different concentration of Mg-salt filler utilized P(VDF-HFP) films.

[‡]The degree of β - crystallinity (χ_{β}) and γ - crystallinity (χ_{γ}) are calculated by the following equations (eqn S1 and S2)

$$\chi_{\beta} = \chi_c \times \left(\frac{A_{\beta}}{A_{\beta} + A_{\gamma}} \right) \times 100\% \quad (\text{S1})$$

$$\chi_{\gamma} = \chi_c \times \left(\frac{A_{\gamma}}{A_{\beta} + A_{\gamma}} \right) \times 100\% \quad (\text{S2})$$

where, A_{β} and A_{γ} indicate the total integral area from β - and γ -crystalline phases peaks respectively.

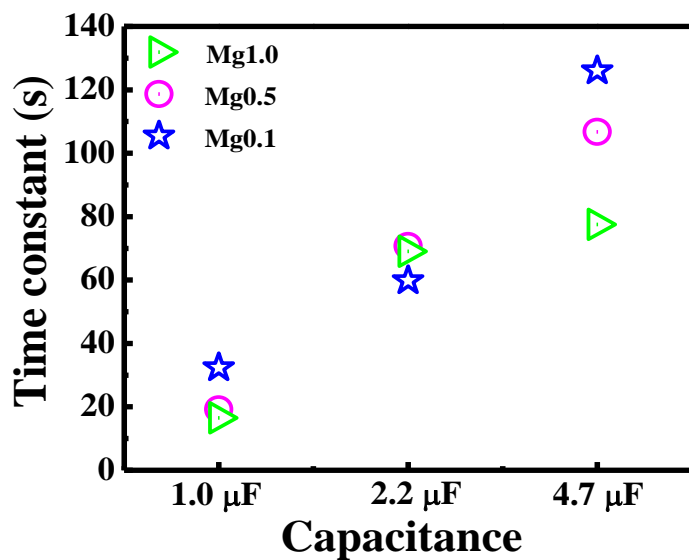


Fig. S4 Time constant for the capacitors (e.g., 1, 2.2, and 4.7 μF) for each FPG fabricated with different Mg# films.

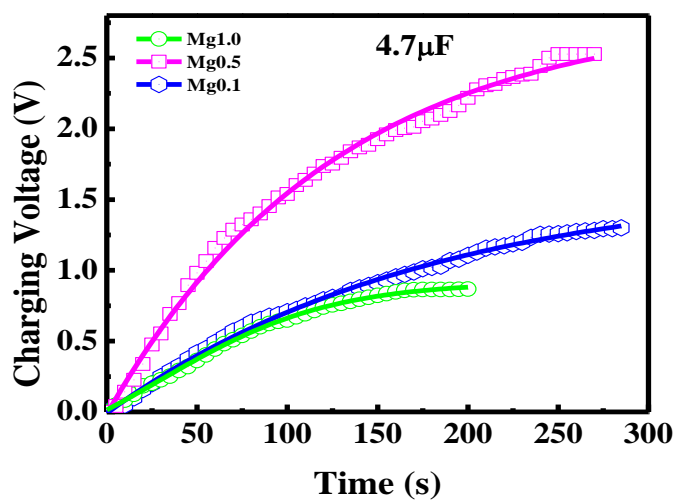


Fig. S5 Capacitor charging performance ($C = 4.7 \mu\text{F}$) with FPG made with Mg# films (#: 0.1, 0.5 and 1.0).

Table S1 Power stored in capacitor ($C=4.7\mu\text{F}$) from different FPGs, fabricated with different Mg# films. The calculation was performed based on the Fig. S5.

FPG made with the following films	Stored Power (nW) in Capacitor ($C=4.7\ \mu\text{F}$)
Mg0.1	14.0
Mg0.5	58.8
Mg1.0	8.5