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 (χβ) and γ- crystallinity (χγ) are calculated by the following equations (eqn S1 and S2)

\[
\chi_\beta = \chi_c \times \left( \frac{A_\beta}{A_\beta + A_\gamma} \right) \times 100\% 
\]

\[
\chi_\gamma = \chi_c \times \left( \frac{A_\gamma}{A_\beta + A_\gamma} \right) \times 100\% 
\]

where, \(A_\beta\) and \(A_\gamma\) 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 µF) with FPG made with Mg# films (#: 0.1, 0.5 and 1.0).
Power stored in capacitor (C=4.7μF) from different FPGs, fabricated with different Mg# films. The calculation was performed based on the Fig. S5.

<table>
<thead>
<tr>
<th>FPG made with the following films</th>
<th>Stored Power (nW) in Capacitor (C=4.7 μF)</th>
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<tbody>
<tr>
<td>Mg0.1</td>
<td>14.0</td>
</tr>
<tr>
<td>Mg0.5</td>
<td>58.8</td>
</tr>
<tr>
<td>Mg1.0</td>
<td>8.5</td>
</tr>
</tbody>
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