

## Flexible paper-based solid state ionic diodes

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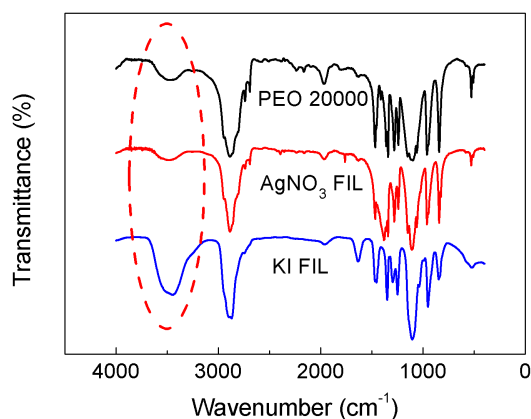
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### Supporting information:

In order to study the existence of water, FTIR spectroscopy was tested for pure PEO 20000, AgNO<sub>3</sub> FIL and KI FIL. The absorption peaks around 3500 cm<sup>-1</sup> demonstrated the existence of water. It is hard to confirm if water molecules exist in all samples because many water molecules were involved by KBr wafer during measurement. However, the peak of KI FIL is obviously higher than the others, which means water molecules must exist in the KI FIL due to the hygroscopicity of KI.



FTIR spectrums of PEO 20000, AgNO<sub>3</sub> FIL and KI FIL