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# Graphene oxide membranes for reverse electrodialysis applications

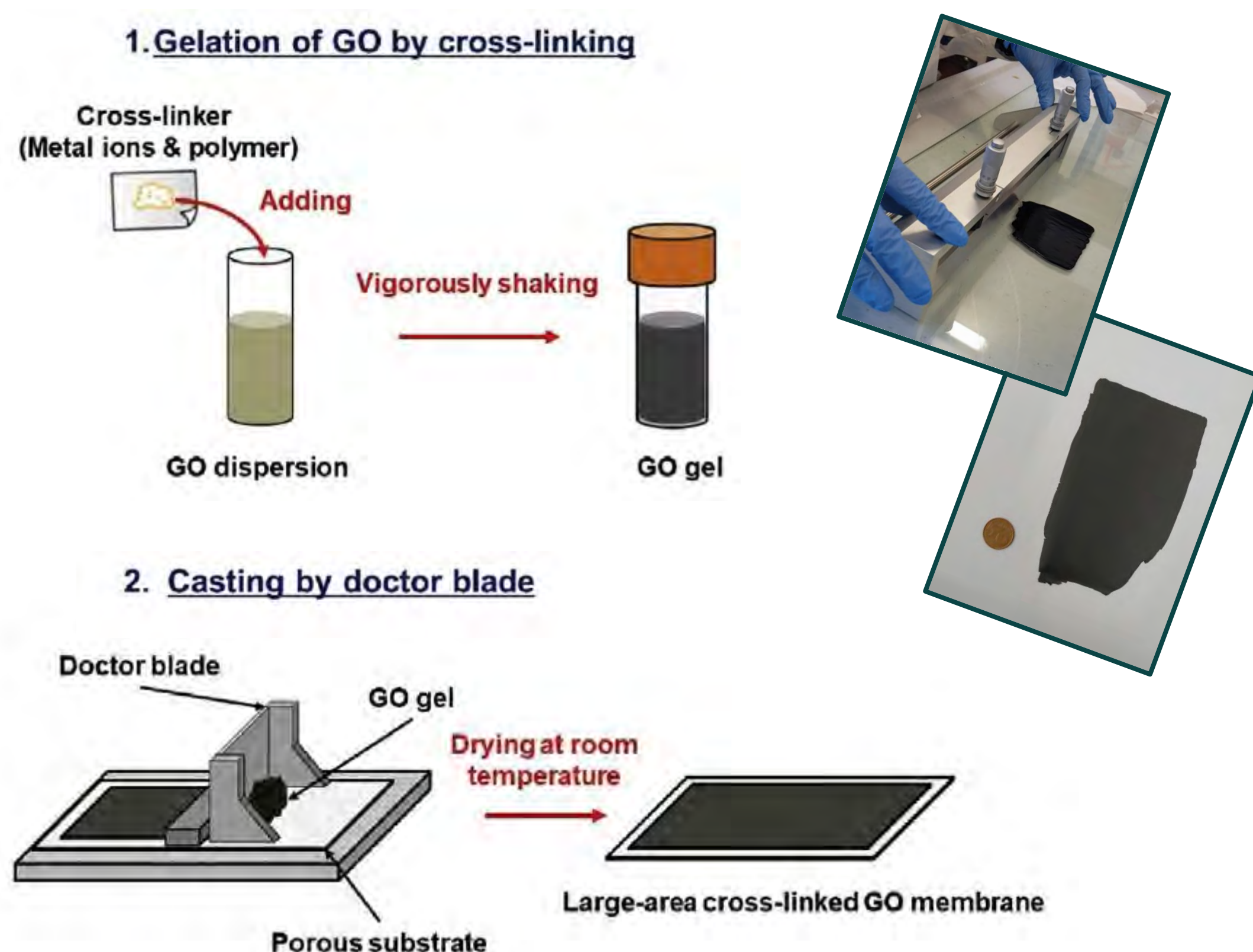


intelWATT

Intelligent Water Treatment for water preservation combined with simultaneous energy production and material recovery in energy intensive industries

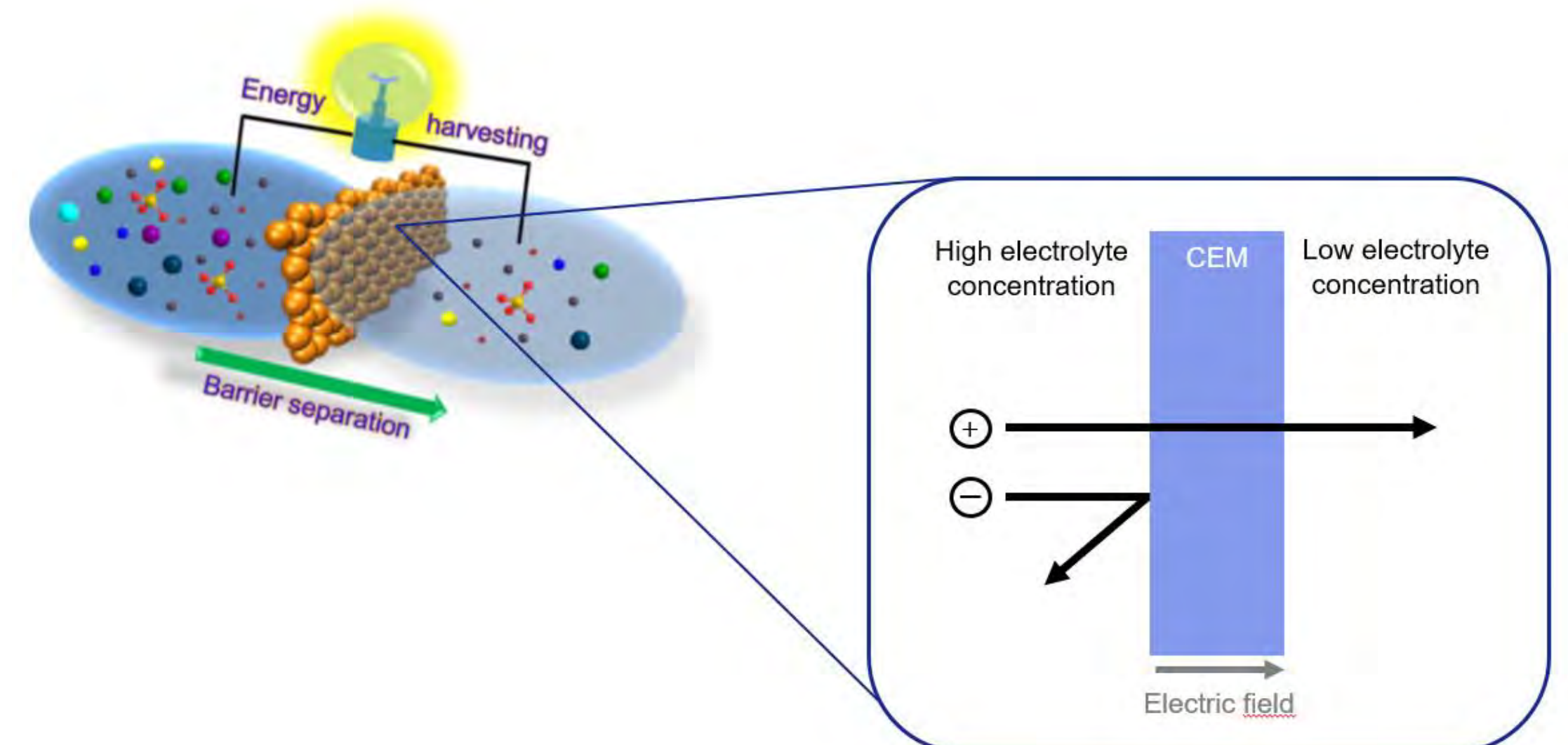
## FABRICATION METHOD

- **Doctor blade** technique is used as an alternative scalable fabrication method.



## REVERSE ELECTRODIALYSIS

- The interaction of the membrane with the ions will produce an **unbalanced movement of ions** across the membrane located between both streams, leading to a charge separation that will cause a **potential difference**. A net current flow can be generated by using suitable electrodes and an external load resistance.



- Graphene oxide membranes have been demonstrated to be effective for reverse electrodialysis applications.

## GRAPHENE OXIDE MEMBRANE

- Graphene oxide functional groups give a **negative character** to the membrane.
- Graphene oxide flakes stack one to each other due to hydrogen bonding and  $\pi$ - $\pi$  stacking, forming **nanochannels**.

