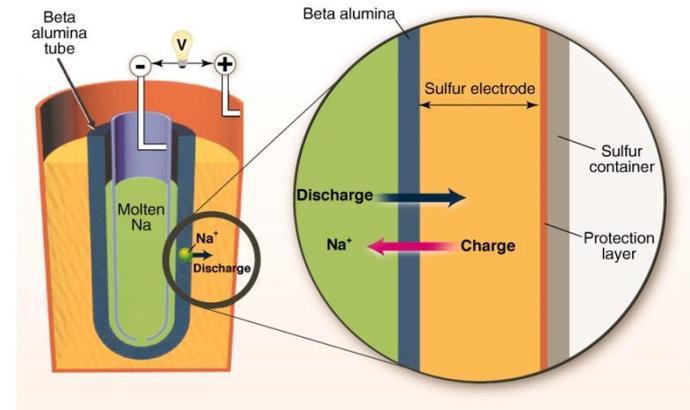


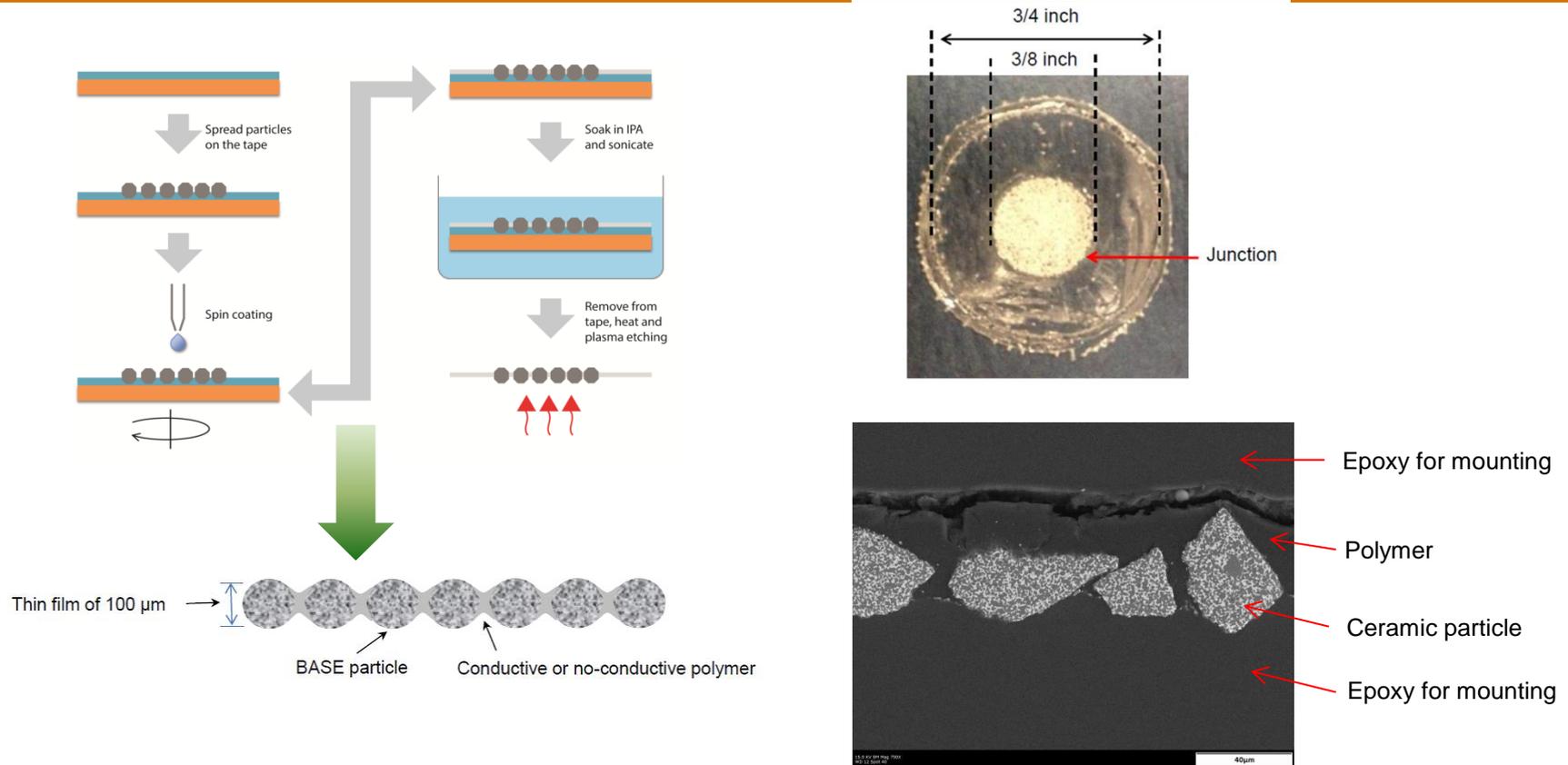
Fabrication of flexible, thin-film beta-alumina/polymer composite membrane for sodium battery applications

➤ Introduction:

- ❑ $\beta''\text{-Al}_2\text{O}_3$ is the dominated choice for the electrolyte materials of sodium batteries because of its high ionic conductivity, excellent chemical stability, high selectivity, and satisfactory mechanical strength.
- ❑ The major problem for the batteries with ceramic electrolyte is it is difficult to scale up because of the thermal expansion, bonding, and sealing between ceramic and ceramic, and ceramic and metal parts.
- ❑ Fabrication of flexible ceramic/polymer composite electrolyte potentially will make it much easier to scale up for mass production.



Results and summary



- A flexible, one-ceramic-particle-thick, and pinhole-free $\beta''\text{-Al}_2\text{O}_3$ /polymer composite membrane has been fabricated via a spin-coating process.



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