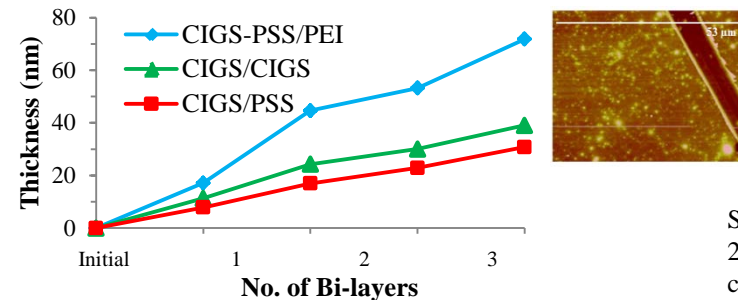
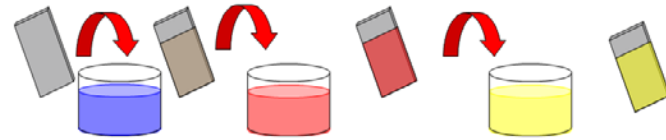
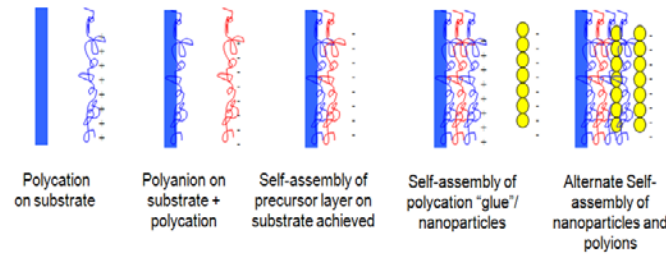


Scalable Nanomanufacturing Process using Layer-by-Layer Nanoassembly

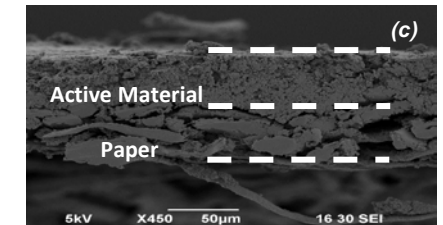
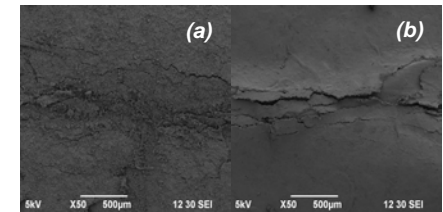
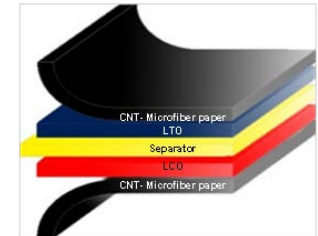
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Layer-by-layer (LbL) nanoassembly is a key scalable nanomanufacturing technique based on the sequential deposition of oppositely charged polyelectrolytes or nanoparticles on surfaces of different shapes and sizes.

Presented applications include: Pulp microfiber nanocoatings to obtain paper-based current collectors for battery applications and nanocoatings for flexible solar cells, polymer-based electronic devices, and sensors.



LbL film deposition of CIGS-PSS/PEI, CIGS/CIGS, and CIGS/PSS. Inset: AFM image of CIGS-PSS/PEI film.



SEM images of samples bent to a 300o angle for 20 times: (a) LCO on CNT-coated microfiber current collector, (b) LCO on Aluminum foil, and (c) SEM images showing the cross section of active material layers on the CNT-microfiber paper current collectors.