Co-extrusion Printing for Low-cost Mass Production

PARC’s novel co-extrusion printing technique offers low-cost mass manufacturing to create micron-scale surface area features that improve the efficiencies of solar cells, batteries, fuel cells, thermoelectrics, superconductors, nuclear fuels, and more.

Controlling surface area or intimately combining materials to make multi-functional structures is known to have dramatically improved products and systems in laboratories around the world. PARC’s co-extrusion printing technique can turn those lab-scale demonstrations into mass production at low cost.

PARC’s innovation
PARC’s co-extrusion printing technique controls the flow of multiple diverse materials within a printhead so that they are co-extruded from a single nozzle without mixing. This allows the materials to shape each other, creating micron-scale structures smaller than conventionally possible. The technique can handle highly loaded viscous pastes, including metals, ceramics, and polymers, and provide tailored compositions for each region within the final structure. This printing technique has been successfully integrated into a pilot production line of a solar cell manufacturing client, demonstrating its low-cost and high-yield operation. The technique offers a way to economically manufacture structural and hybrid material designs, and can be easily adapted to a wide range of applications including solar cells, batteries, fuel cells, thermoelectrics, superconductors, and nuclear fuels.

Engage with PARC to improve your products
PARC can help you apply this novel co-extrusion printing technique to improve your energy storage and other products. Contact PARC Business Development to learn more.

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