

Solar Pods - Conserving Water and Solar Energy

Solar Pods are self-assembling floating solar cells that form a connected photovoltaic array on under-utilized water surfaces to reduce the water evaporation while harvesting incident solar energy transmitted to shore

Unique Challenges: Design of automatically self-connecting electrical connectors that will interconnect pods while being resistant to arcing, sparking and current interruptions, while the pods move and bob along the water surface

Assistant Requested:

Modelling and Numeric Simulation: Contribute to the design, materials selection and fabrication of Solar Pod prototype variants. Conduct simulations of Solar Pod array to evaluate efficiency. Evaluate functionality of electrical and magnetic connectors.

Testing and Validation: Perform testing for materials, processing and design optimization.

Screening of Solar Cells: Testing water ingress during accelerated testing and field deployment.

Budget Available: \$45-75,000 (including voucher)



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Solar Pods are self-assembling floating solar cells that form a connected photovoltaic array on under-utilized water surfaces to reduce the water evaporation while harvesting incident solar energy transmitted to shore

Unique Challenges: Design of pod floatation systems and power tethers to ensure resistance to wind, waves and currents while maintaining interconnectivity and transmitting collected electrical energy safely to shore.

Assistant Requested:

Modelling and Numeric Simulation: Contribute to the design, materials selection and fabrication of Solar Pod prototype variants by modelling power generation, current flow and peak currents and voltages experienced by the array, particularly determine wire and conductor size requirements for current loads and optimize power tether connectors and collectors

Testing and Validation: Screening of electrode materials, materials of construction for bio-compatibility.

Location Tests: Testing larger array of full-sized solar pods on open body of water under actual conditions to determine environmental impact, performance, reliability and maintenance requirements.

Budget Available: \$45-75,000 (including voucher)

