Solar Recharge Station Connector for Cooperative Robotic Watercraft
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Vision
The task is an integral part of the development of a solar recharge station, which will allow airboats to dock and recharge autonomously.

Issues
➢ Ease of capture and reliable connection
➢ Waterproof/Environmental resistance
➢ Low cost/complexity

Solution
The design of connector was inspired by the structure of trolley-bus, imitating the trolley-bus that draws its electricity from overhead wires using spring-loaded trolley poles. The connector consists of two parts:
➢ on-board part including a flexible support and a contact shoe with three poles;
➢ off-board part shaping such as inverted trapezoid fixed on the top of the recharge station.
The recharge process will start when the two parts of connector completely contact.

Results
➢ Made a prototype by Styrofoam and ABS plastic.
➢ Test is being done off board.
The unique design of structure of connector insures the accuracy of contact and the stability in recharging.

Future Work
➢ Finishing the on board test.
➢ Processing the connector in mould mode.

Feedback
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