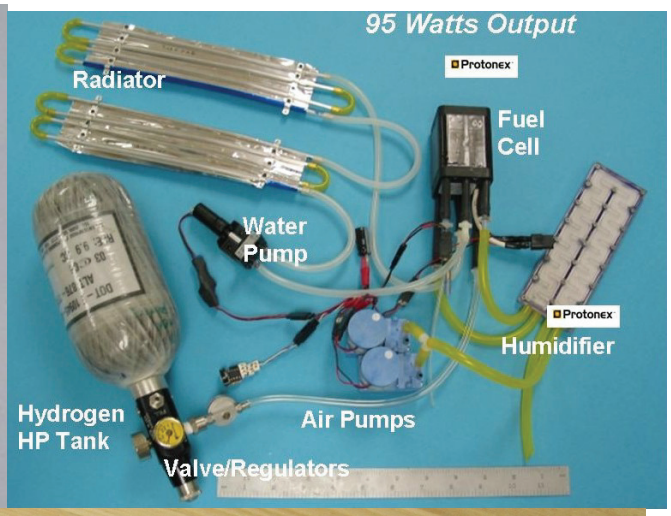
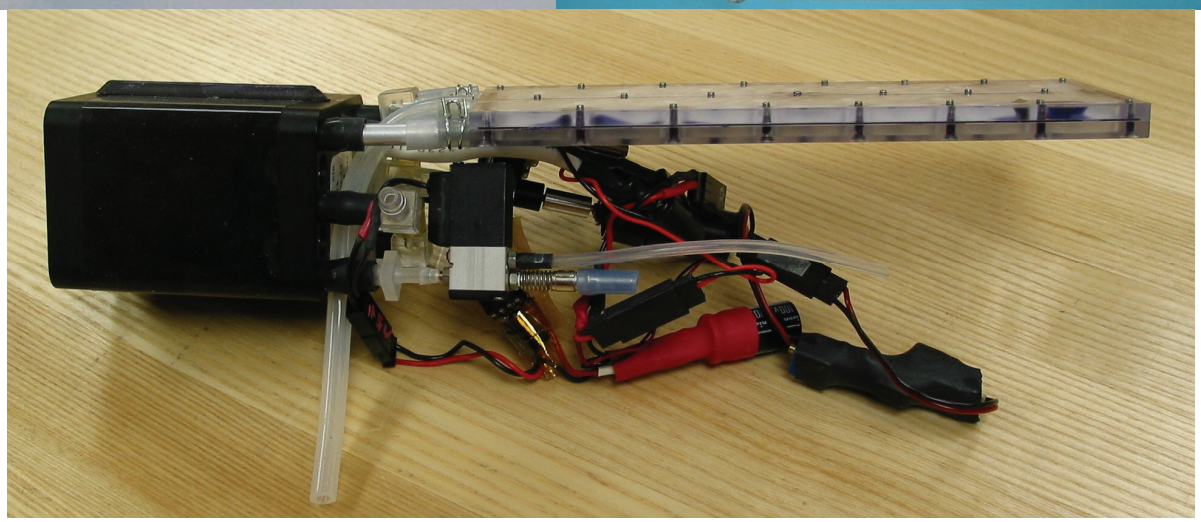
Fuel Cell Propulsion for Small UAVs





The Naval Research Laboratory demonstrated fuel cell propulsion in a 5.6-pound unmanned aircraft, the "Spider Lion," which flew for 3 hours, 19 minutes in November of 2005. The proton exchange membrane fuel cell consumed about 1/2 ounce of hydrogen gas fuel during the flight. The fuel cell power system, which weighed 3.8 pounds, was designed, constructed, and integrated into the test airplane using mainly commercially-available components. Spider Lion's purpose is to research technologies for fuel cell applications that will allow electrically powered devices to achieve a longer operating time than is possible with present battery technology. This project was a joint venture between NRL's Chemistry and Tactical Electronic Warfare Divisions, and Protonex Technology Corporation.

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