

NASA K10 Lunar Rover Inductive Charging Station

The goal of this project is to build an inductive charging station for the NASA Ames K10 lunar robot. K10 is a lunar reconnaissance and surveillance rover currently under testing at NASA Ames Research Center. The K10 rover was built by the Intelligent Robotics Group and has the ability to take panoramic and microscopic images, as well as complete LIDAR scanning. Although K10 can be operated remotely, human intervention is currently required to charge the batteries. An inductive charging station will allow the rover to be continuously operated without intervention.

For this project, students will build an inductive charger for the NASA lunar K10 rover. Charging will be completed by means of a charging arm and a docking station. The charging arm would be mounted to the back of the rover and provide power to 3 different connections. It would also include a webcam to be used as the only visual during docking. The docking station needs to provide enough power to provide between 500 and 1000W after losses (60% power transfer efficiency is desired) to the charging arm, and will be powered by a standard 120VAC wall outlet.

Sponsor: Idaho Space Grant Consortium

Funding: Approximately \$6,000

Travel: NASA Ames Research Center, Spring 2010