

## Solar Energy

Most of the activity of the group was aimed to the development of solar cells and panels in connection with the argentine space program. During 2003 the tasks performed in the frame of a CNEA-CONAE cooperation agreement included: (i) completion of the facilities (Clean Room, Class 10000) for the integration of solar modules for satellites; (ii) development of computational codes for the simulation of satellite power subsystems; (iii) design and test of interconnectors for solar cells; (iv) development of bonding, soldering and welding procedures; (v) design, integration and characterization of an engineering module, composed by two strings of 32 solar cells each, for qualification tests; (vi) thermal vacuum and mechanical (vibrations) tests of the engineering module; (vii) development of new electrical characterization techniques for solar cells and strings, based on continuous and pulsed (flash) illumination; (viii) development of crystalline silicon solar cells; (ix) development of radiation damage test facilities. Particularly, several experiments of radiation damage were performed on crystalline Si and GaInP/GaInAs/Ge (advanced triple junction) solar devices using a proton external beam from TANDAR accelerator and electrons provided by a linear accelerator LINAC.

For terrestrial applications, the Solar Energy Group promotes and participates in the establishment of national standards for solar energy systems in the frame of the Argentine Institute for Standards (IRAM). It also designs and constructs low cost solar radiation sensors (pyranometers). Several prototypes were calibrated by the National Weather Service (“Servicio Meteorológico Nacional”) and provided to different institutions.