High-Volume Production of Lightweight Multijunction Solar Cells

Reduces the cost of cells via a 6-inch gallium arsenide (GaAs) epitaxial lift-off and substrate reclaim process

MicroLink Devices, Inc., has transitioned its 6-inch epitaxial lift-off (ELO) solar cell fabrication process into a manufacturing platform capable of sustaining large-volume production. This Phase II project improves the ELO process by reducing cycle time and increasing the yield of large-area devices. In addition, all critical device fabrication processes have transitioned to 6-inch production tool sets designed for volume production. An emphasis on automated cassette-to-cassette and batch processes minimizes operator dependence and cell performance variability. MicroLink Devices established a pilot production line capable of at least 1,500 6-inch wafers per month at greater than 80 percent yield. The company also increased the yield and manufacturability of the 6-inch reclaim process, which is crucial to reducing the cost of the cells.

Applications

NASA
- Solar electric propulsion programs

Commercial and Military
- Electric-powered unmanned aerial vehicles (UAVs)
- Commercial and military satellites
- Portable solar electric power chargers

Benefits

- Produces lightweight and high specific power multijunction solar cells
- Offers an inexpensive and streamlined manufacturing process

Firm Contact

MicroLink Devices, Inc.
Christopher Youtsey
cyoutsey@mldevices.com
6457 West Howard Street
Niles, IL 60714–3301
Phone: 847–588–3001

Proposal Number: 11-2 X8.04-9001