



## Solar Junction

**The Company:** Solar Junction Corporation is a privately held company that designs and manufactures the world's highest efficiency commercially available solar cells.

**Location:** Phoenix, Arizona

**Position Title:** Member of Technical Staff, MOCVD Development

The Member of Technical Staff would be responsible for developing and optimizing MOCVD epitaxial growth capability at Solar Junction. MOCVD capability will be combined with the Company's existing MBE know-how to develop optimized epitaxial material for high-efficiency, lattice matched solar cells. Hands-on experience in MOCVD growth of epitaxial material for multi-junction solar cells is required.

### **EDUCATION / CERTIFICATION:**

- M.S. or Ph.D. in Electrical Engineering, Materials Science, or Applied Physics with strong emphasis on III-V solar cells
- Minimum 5 years of industry experience in epitaxial growth using MOCVD/MOVPE
- Strong foundation in compound semiconductors

### **KEY ROLES & RESPONSIBILITIES**

- Create and optimize MOCVD epitaxial growth structures, recipes, and process for the development of high-efficiency multi-junction solar cells that can be manufactured at high volumes
- Execute MOCVD growth recipes and characterize grown epitaxial wafers
- Collaborate closely with device design engineers, MBE epitaxy growers, test and process engineers to realize highest-efficiency solar cells in the industry using hybrid MBE/MOCVD epitaxy
- Specify device processing and testing, then analyze data to iterate the epi design for further optimization
- Plan and execute Design of Experiments (DOEs) and analyze results
- Ensure manufacturability of developed epi and take leadership role in transferring the epi design to production thru the NPI process
- Automate analytic processes to streamline and tighten epi distributions
- Define and implement MOCVD tool and process quality controls
- Work closely with partners and suppliers to maximize MOCVD uptime and utilization
- Support the Company's technology and product roadmaps by developing epitaxial materials for opto-electronic devices
- Help implement the Company's plans to expand its epitaxial growth capabilities and capacity at new site

### **MANDATORY SKILLS:**

- Hands-on epitaxial growth experiences on commercial AIXTRON or Veeco MOCVD/MOVPE systems

- Strong understanding of MOCVD hardware, operation and components, including system troubleshooting
- Hands-on experience with epitaxial growth of high-efficiency multi-junction solar cells for CPV or space applications
- Familiar with epiwafer characterization, including PL, Hall measurement, SEM & CL, EDX, AFM, C-V, ECV, and X-ray measurements
- Strong solar cell device background and a solid understanding of epi to device performance interactions
- Able to take device development roadmaps and convert them into actionable epi process development and/or improvement plans, and then drive these plans to completion
- Able to support production by analyzing and modeling device data and tying it back to epi processes to improve yields and performance
- Able to work in a close knit collaborative team environment is a must.
- Solid communication skills and the ability to work effectively in a fast-paced team environment
- Have strong analytical skills and be data-driven
- Solid background in compound semiconductors

#### **HIGHLY PREFERRED SKILLS:**

- Hands-experience developing and supporting the production of epi for space solar cells
- Hands-on experience transitioning developed epi to volume production and supporting epi production for solar cells
- Experience growing epitaxial materials on AIXTRON G3 2600 As/P MOCVD reactor
- Hands-on experience performing maintenance of MCVD reactors
- Experience with MBE epitaxial growth and knowledge of MBE hardware
- Knowledge of dilute nitride materials and technology
- Experience with epitaxial growth for opto-electronic devices such as laser diodes, photodetectors, Avalanche Photodiodes

If interested and qualified, please send your CV/resume to [jobs@sj-solar.com](mailto:jobs@sj-solar.com) with the Position Title in the subject line.