



SOLAR PHOTOVOLTAIC INDUSTRY

POLYSILICON ROD HARVESTING AUTOMATION

The Situation

As the solar photovoltaic industry ramps production, polysilicon feedstock is in short supply. In addition to building new factories, manufacturers also need more automated means to grow and harvest the polysilicon rods. Our client, an industry leader in developing polysilicon feedstock reactors, needed to automate the harvesting process.



Polysilicon Deposition Chambers at REC Factory

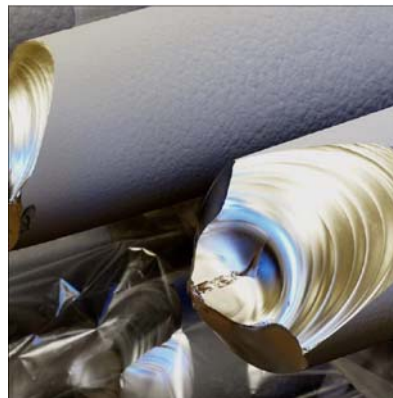
The Challenge

Polysilicon rods are fragile, heavy, and non-uniform. Current manual handling generates yield loss from

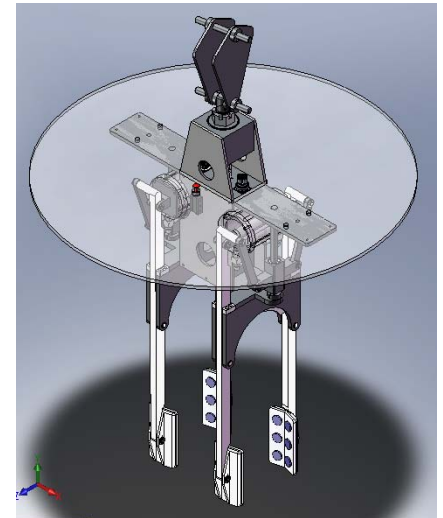
contamination and damage. Automation is difficult because the rod diameters vary significantly and the spacing between rods is small. In addition, the factory environment is classified as a hazardous area.

The Solution

Owens Design developed and built an automated mechanism to harvest the rods. The design minimized particle and metals contamination through guards and material selection. The



Polysilicon Rods



Innovative Polysilicon Rod Harvesting Mechanism and Gripper

mechanism accommodated a wide range of rod diameters and was compact enough to fit between the largest rods. Owens Design provided the safety and standards knowledge and design including Class 1, Division II, Group B environmental compliance.