

## **Nines Photovoltaics ships first industrial tool to Germany**

Dublin based solar cell equipment manufacturer, Nines Photovoltaics, <http://nines-pv.com>, has completed the build of its first industrial silicon wafer processing tool and has recently shipped it to the Fraunhofer ISE Germany, the largest solar energy research institute in Europe, where it will be installed and validated in a production environment. Nines Photovoltaics technology can dramatically change the processes used to manufacture Solar Cells, reducing the production cost whilst also increasing cell efficiencies.

The shipment of this automated tool is a big step toward commercialization and represents a major milestone for Nines Photovoltaics, moving the technology away from the lab and closer to production. Fraunhofer ISE operates at the cutting edge of innovative solar technology and is one of only two places in the world that can certify solar cell efficiencies. They will provide an ideal platform to benchmark Nines Photovoltaic process against state of the art solar cell production, and promote the technology to solar cell manufacturers worldwide.

The areas of cost reduction and increased cell efficiency are of the utmost importance to solar cell manufacturers as they seek a competitive advantage in the struggle to survive this period of major consolidation within the PV Industry.

Through its breakthrough proprietary technology and equipment, Nines is working on dramatically changing the processes used to manufacture Solar Cells, reducing the production cost whilst also increasing cell efficiencies.

The Nines tool is used to etch away layers of silicon from a crystalline silicon wafer to facilitate the creation of a solar cell (in conjunction with a number of other process steps). This etching is currently done using a wet based chemical process. Nines has pioneered the use of a novel high throughput atmospheric pressure dry etching technology and is the first company to offer a processing solution, which uses a fully dry process using only Zero Global Warming Potential chemicals. In addition to the cost savings and efficiency increase, the transition to dry etching will dramatically lower cell manufacturer's water consumption, enabling investment in the further scaling of their manufacturing facilities.

The company has been working with the Fraunhofer Group since 2010 to develop this new atmospheric pressure dry etch technology – the first Nines tool having been developed with Fraunhofer in August 2011.

Commenting on the progress Nines have made, Edward Duffy, CEO says “we set out to radically improve the manufacturing process for Crystalline Silicon Solar Cells, to date we have executed on our plans and the shipping of this tool to the Fraunhofer ISE pilot production line is a significant milestone for the company and bodes well for the future”

Nines Photovoltaics technology will assist in moving the solar industry closer to

“Grid Parity” – a point where solar electricity can compete on level terms with electricity generated from the burning of fossil fuels.

### **About Nines Photovoltaics**

In 2008 the founders of Nines identified a niche area in the Photovoltaic (PV) industry to which they could apply their expertise from the Semiconductor Industry. In 2010 they collaborated with a leading German Research Institute – the Fraunhofer Institute to develop the offering further.

Nines Photovoltaics does not manufacture electricity generating solar cells but rather production machines & processes. Technology development to date has been partially funded via Enterprise Ireland (Irish state Enterprise Board) and under European FP7 funding (project name SOLNOWAT).

Based in the Synergy Centre on the Tallaght IT Campus, the company is headed up by Edward Duffy CEO, Laurent Clochard CTO and Simon Forsyth CFO.