

## **PixQuanta Manufacturing Design and Process Integration Engineer, May 2020**

Reports to: The Manufacturing Design and Process Integration Engineer will report to PixQuanta CEO or CTO.

PixQuanta is seeking to hire a manufacturing design and process integration engineer to help further the development of its leading edge photosensor technology. The candidate will define the fabrication process, optimize the fabrication process steps to reach target performance, and interface with a CMOS foundry partner to fabricate engineering test devices for custom projects and for the PixQuanta product range. In this role the engineer will work with a CMOS foundry to deliver the target photosensor devices for LiDAR, 3D and X-Ray applications. In the first 3 months the process flow for current fabrication of current generation devices will be optimized. In the first 6 months first engineering devices will be fabricated and tested for customer evaluation. In the first year the following new sensor generation will be defined, and engineering devices fabricated.

Location: Cork city, Ireland.

### Responsibilities and Duties

- The role is responsible for point of contact to a CMOS fab and its process engineers to develop and manufacture PixQuanta CMOS sensors.
- In this role the engineer will design the process of PixQuanta CMOS sensors and analyse the impact of device performance through measurement at wafer and part level test
- Documentation keeping is a key aspect of this role - all manufacturing aspects of the process at the wafer level will be captured in documentation such as flowcharts, technical notes, white papers etc. Familiarity with quality management systems is essential.
- The design, management, and execution of wafer lots with a view to understanding the performance of PixQuanta's sensor technology. This includes design of experiments, skew lot and analysis.
- Optimization of individual processing steps to achieve target optical and electrical characteristics of PixQuanta's sensor technology.
- Provide reporting on schedule and progress on weekly basis.
- Manage the transfer of PixQuanta's sensor process between Silicon CMOS foundries.

### Required experience

- Day to day work will be managing the processing wafers in a CMOS R&D wafer fab.
- Must have experience with CMOS fabrication techniques and tools, for example:
  - RIE etching
  - Plasma Enhanced Deposition
  - sputtering
  - Mask aligner lithography tools
  - stepper lithography tools
  - spinner
  - Thermal growth ovens
  - Curing ovens
- Familiarity with common CMOS characterization and inspection tools including microscope, profilometer, optical interferometer (transparent layer thickness determination), Ellipsometer.

- Experience with PECVD Silicon growth a plus, including high level characterization tools specific to photovoltaics including quantum efficiency, spectral range, and thin film quality determination using Raman spectroscopy.
- Be able to set up design of experiments, use descriptive statistics for lot analysis, and be able to construct skew experiments for process optimization.
- Proven ability to deliver projects and documentation thereof. Experience with automotive and space-qualification would be considered a plus.

#### Qualifications

- Engineering or physics degree at Master's level (PhD also considered).
- Must have minimum 5 years silicon CMOS clean room microfabrication processing experience.
- Must be familiar with standard silicon CMOS processing techniques.
- Excellent communication skills, with track record in leading a team.
- Must be dynamic, motivated, excellent problem solver who can work independently and in small teams, and available to travel when required.