NanoSpray

Technical Assistance Request

NanoSpray's mission is to reduce the cost of Cadmium telluride (CdTe) PV manufacturing and provide improved efficiency over existing CdTe solar cell performance. NanoSpray will achieve these gains by developing a manufacturing procedure for solution-processable metallic 2D material as a back contact for integration into the assembly line. Our team has vast experience and expertise in the device physics, materials science, and prototyping of the NanoSpray technology, but we will need assistance to produce certain technical deliverables which will be key in our continued efforts.

National Laboratory Collaboration

NanoSpray would benefit from collaboration with NREL through the lab's unique capabilities in the following areas:

- Accelerated solar testing - this will be important to determine lifetime and weathering for both the individual cell and module prototypes.
- Efficiency certification - NREL offers 3rd party certification of PCE to validate our claims of improved efficiency.
- Consultation - We have experience with individual cells, but advice from experts on upscaling to module and panel-scale prototypes will be helpful to improve workflow efficiency.

Private Facility/American-Made Network Collaboration

The following items will be sourced from private entities, including those participating in the American-Made Network:

- Business development - We will need feedback from consultants and experienced venture capitalists on how to best transform our idea and prototype into a company.
- Intellectual property and trademarks - We will work with NYU's Office of Industrial Liaison to ensure that our technology, trademarks, and continued developments are protected.
- Field testing – In addition to accelerated testing, validating a prototype design requires deploying the NanoSpray technology in the field. Field testing can be achieved through collaboration with a CdTe solar field developer to include a NanoSpray-contacted CdTe panel in an array of conventional CdTe panels for comparison in a real-world environment.
- Customer feedback - Following development of our module prototype, our team will solicit feedback from Toledo Solar pertaining to initial integration into their assembly line.

- Industry relationships - Moving forward it will be important to build a client base beyond Toledo Solar, so we will leverage entities within the American-Made Network to establish connections to companies potentially interested in the NanoSpray technology.

- Supply chain management - The scale-up phase relies on sourcing larger quantities of raw materials than we have previously needed. This will require contacts and expertise for sourcing reasonably priced materials.

- Distribution partners - As business grows, it will become necessary to form partnerships with equipment distributors to support regional sales and support services.

- Office/Lab space - Once we have several clients, it will be necessary for our business to separate from the TMD laboratory space. At this stage we intend on utilizing the American-Made Network to obtain office space for administrative operations and lab space for R&D operations.