

High-Vacuum  
coating systems

Deposition  
sources

Concept/Design  
Prototype  
Production

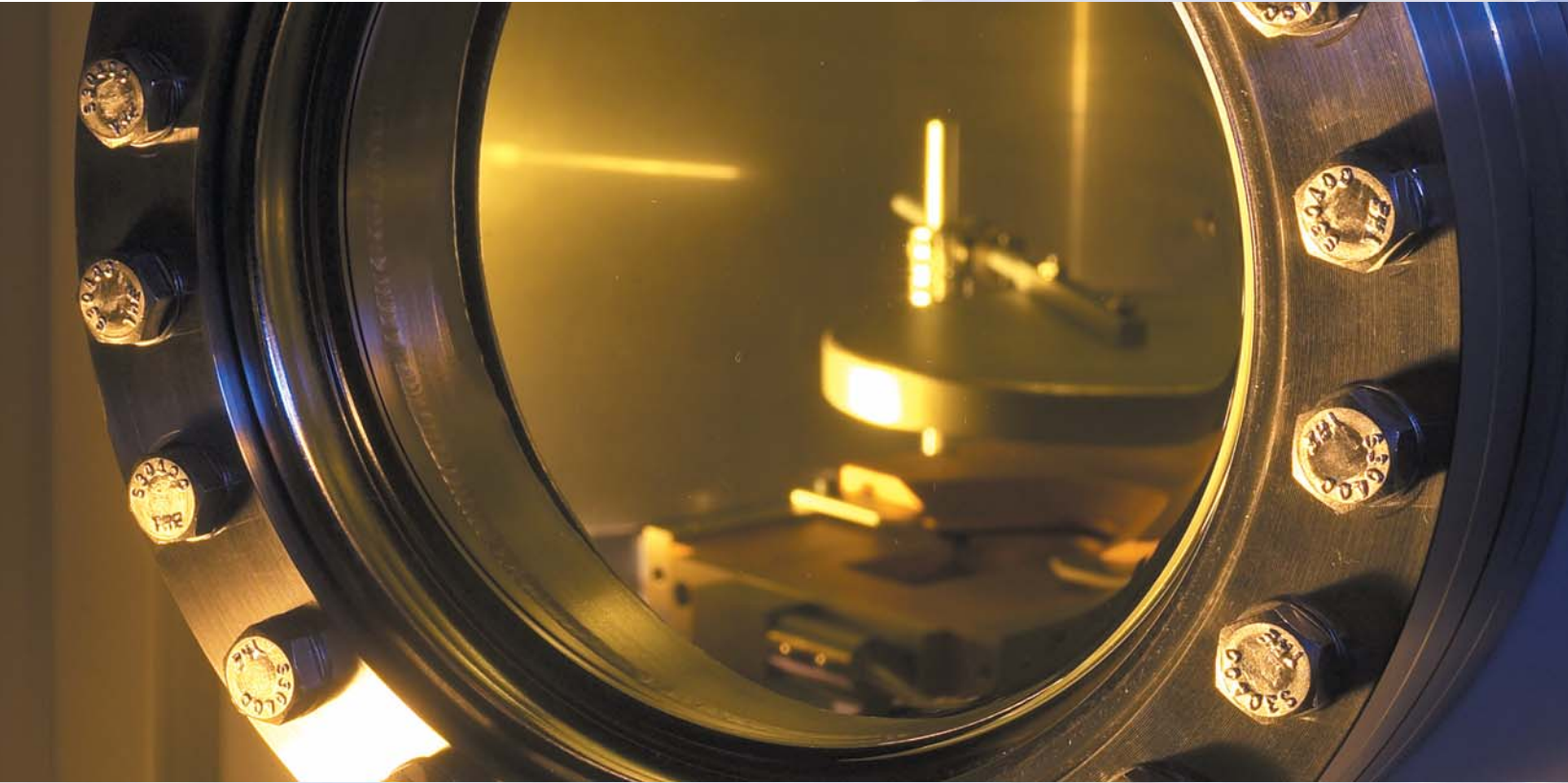


# SYSTEMS AND SCIENCE FOR PHOTOVOLTAICS

Something new under the sun



Something new under the sun.



It's been a long time coming, but solar energy is finally realizing its potential—thanks to innovative coatings for photovoltaics. Promising significant improvements in cost and efficiency compared to traditional silicon cells, thin-film photovoltaics are poised to be the next big thing in solar cell technology. And VPT is right in the thick of solar cell thin-film innovation. Or as we like to call it, *thinnovation*.

We understand the challenges we all face to achieve grid parity using thin-film solar cells. But VPT also has the knowledge and expertise needed to meet these challenges. We have extensive experience in the design and manufacture of high-vacuum coating systems, and proven capabilities in even the most demanding thin-film applications. Our expertise is unsurpassed, for example, in the kind of large area coating systems that make thin-film the right technology choice for the future of solar energy generation.

VPT also has a firm grasp on the necessary materials science disciplines, especially in the context of high-temperature film deposition. Add our proficiency in thermodynamic simulation and modeling and you begin to understand why major players in solar have already chosen VPT as their partner in *thinnovation*.

Whether you need a single prototype or complete, turnkey production systems, if you're looking to stake your claim at the forefront of the coming thin-film solar cell boom, you need look no further than VPT. No company has more combined knowledge and experience. And no one is more eager to take on new technological challenges and devise *thinnovative* ways to meet them, from design and fabrication to testing and delivery.



## Concept

How do you know if a coating concept has merit? Start by using a precision coating chamber made with thirty years of insight and knowhow. VPT manufactures some of the largest in-line precision coaters configured across a wide range of applications for R & D, custom runs, or to deliver on the most challenging coating projects.

## Concept to Reality

As high-vacuum process technologists, we understand the possibilities. Evaporation and sputtering systems, control systems, monitoring, and metrology are all part of process coating science recipe. As machinists and fabricators we know what's possible and how to make it work. VPT's design, engineering and production teams turn concept into application. Whether it's innovative in-line systems to maintain high-vacuum, precision machine transport systems to ensure uniformity or removable shielding for rapid production changes, VPT has the skill set to handle it. We design production systems to accommodate large substrates, high production output, multiple processes or unusual demands. VPT manufactures systems that work, that fit, that scale.



## Design to Production

There is no substitute for our engineering, machining and fabrication experience. At our plant in the Boston area, production designs become reality. Years of proven, high-vacuum process technology are united with state-of-the-art electronics, control systems and science to craft the finest coating systems.

Your partner in  
**THINNOVATION**



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