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Abstract for an Invited Paper for the MAR13 Meeting of the American Physical Society

## George E. Pake Prize Lecture: Crystalline Silicon Photovoltaics: Accelerating to Grid Parity MARK PINTO, Applied Materials

Lost in recent headlines about solar company failures, reduced government support and depressed stock valuations is the fact that photovoltaic (PV) systems continue to be installed at an extremely healthy rate – a ten-fold increase between 2007 and 2012, to a cumulative 100GWp of installations worldwide. The primary factor behind this remarkable growth has been cost reduction at the installed system level afforded by manufacturing and technology improvements to the crystalline silicon (c-Si) PV cell. In fact in the past 2 years, c-Si module cost learning curves have accelerated over their historical norms as a function of both volume and time, and as a result c-Si PV has reached parity with conventional forms of electricity in 20+ countries worldwide. In this presentation future c-Si technology paths will be reviewed along with market implications, leading to the projection that between 2015 and 2020, c-Si based PV electricity will be cost-effectively delivered to >95% of the world's population.