

Abstract Submitted
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Interference Lithography for Vertical Photovoltaics AMY BALLS, LEI PEI, JOSHUA KVAVLE, ANDREW SIELER, STEPHEN SCHULTZ, MATTHEW LINFORD, RICHARD VANFLEET, ROBERT DAVIS, Brigham Young University — We are exploring low cost approaches for fabricating three dimensional nanoscale structures. These vertical structures could significantly improve the efficiency of devices made from low cost photovoltaic materials. The nanoscale vertical structure provides a way to increase optical absorption in thin photovoltaic films without increasing the electronic carrier separation distance. The target structure is a high temperature transparent template with a dense array of holes on a 400 - 600 nm pitch fabricated by a combination of interference lithography and nanoembossing. First a master was fabricated using ultraviolet light interference lithography and the pattern was transferred into a silicon wafer master by silicon reactive ion etching. Embossing studies were performed with the master on several high temperature polymers.

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