

Wednesday Afternoon, October 31, 2012

Exhibitor Technology Spotlight

Room: West Hall - Session EW-WeA

Exhibitor Technology Spotlight

Moderator: D. Surman, Kratos Analytical Inc.

3:20pm EW-WeA5 **Heidelberg Instruments microPG501, A Direct Write Lithography Tool.** *N. Wijnaendts van Resandt*, Heidelberg Instruments

Heidelberg Instruments Presents the newest addition to its lineup of Direct Write Lithography tools. These tools are used for the production of photomasks as well as for direct write on substrates for MEMS, microfluidics, MicroTAS, micro optics and a wide variety of other applications where a lithographic process is required.

3:40pm EW-WeA6 **Dry Etching Enabling Surface Texturing for Thin Substrate Solar Cells.** *R. Mohondro*, Plasma-Therm LLC

Solar energy implementation continues to advance towards grid parity through efforts to reduce costs and increase efficiency. Higher cell efficiency can result from many approaches. This work looks at the method of surface texturing to enhance light capture and reduce losses due to unwanted reflection. Although surface texturing of crystalline silicon has traditionally been achieved with wet (alkaline) chemistry, it faces limitations with thin wafers. Significant work is being done to reduce silicon material costs by reducing wafer thickness. Recent work has demonstrated wafers 10-15 μ m thick with 10x estimates of lower initial material costs. However, the desired efficiency improvements resulting from texturing are not possible with wet processing as the texturing thickness approaches or exceeds that of the wafer thickness. In this work we present enabling dry etching technology that offers efficiency enhancing texturing compatible with very thin wafers. Limiting the material removed to approximately 1 μ m eliminates surface damage while maintaining the structural integrity of the thin wafer and generating the required anti-reflection morphology. Dry etching process data showing controlled adjustment of the textured surface and the impact on reflectivity will be discussed along with the challenges of handling these extremely thin substrates.

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