

- RADIATION CHEMISTRY
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# Adhesion of Diazoquinone–Novolac Photoresist Films Implanted with Boron and Phosphorus Ions to Single-Crystal Silicon

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## Abstract

The effect of ion implantation on the specific energy of delamination of FP9120 diazoquinone–novolac photoresist films deposited on single-crystal silicon wafers has been studied. It has been found that during the implantation of boron and phosphorus ions, ester crosslinks between hydroxyl groups on the surface of an oxide layer of the silicon wafer and the carboxyl groups of 1-H-indene-3-carboxylic acid grafted to the polymer are formed at the photoresist–silicon interface, thereby leading to an increase in the specific energy  $G$  of film delamination from the substrate. This effect is observed far beyond the ion range, being more pronounced in the case of implantation of phosphorus ions.

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