

Gas Cluster Ion Beam (GCIB) System

TEL Epion introduces the *n*Fusion™ GCIB System for infusion doping and dose controlled deposition. The *n*Fusion utilizes a Gas Cluster Ion Beam (GCIB) source to produce energetic clusters of atoms. Dopant-containing gas species can be introduced into these host gases to become incorporated into the clusters and subsequently into the processed substrate. Infusion processing is ultra shallow, high rate, and occurs at room temperature. As the process dose increases, infusion doping transitions into film deposition to virtually eliminate the surface interface.

*n*Fusion™ System



*n*Fusion™ Processing System is used for "infusion" doping and surface modification. Infusion is a material modification technology that provides new solutions for advanced device requirements. It utilizes a Gas Cluster Ion Beam (GCIB) source to produce a directed energetic chemical beam.

Applications

- Ultra-Shallow Doping
- Cu surface Treatment
- Poly Doping
- Strain Technology

Features

- Shallower doping / No end-of-range (EOR) defects for reduced leakage
- Room Temperature deposition of SiN produces high quality film
- Infusion processed Cu exhibits improved electromigration
- Small footprint

Dopant-containing gas species can be introduced into this chemical beam and become incorporated into a substrate. Infusion processing is ultra shallow, high rate, and occurs at room temperature.

※*n*Fusion is a trademark of TEL Epion, Inc. in Japan and other countries.

Ultra-Trimmer™ System



Ultra Trimmer™ System offers the unique capability of corrective etching using Gas Cluster Ion Beam (GCIB) technology. GCIB technology provides a precisely controlled, focused reactive beam to provide extremely accurate localized surface etching. The system can remove

Applications

- Frequency trimming of Surface and Bulk Acoustic Wave (SAW, BAW) Filters
- Precision trimming of Optics and Masks
- Silicon on Insulation

Features

- Location Specific Processing (LSP) can control the amount etched over a substrate to maximize yields
- Low temperature etch process is photoresist compatible
- Flexible wafer handling options 100/200/300/others
- Roughness (Ra/RMA) on the surface reduction is also available

or minimize non-uniformities on surfaces or by adjusting the amount etched over each location on a substrate. Flexible wafer handling allows the Ultra Trimmer™ to be used in many industrial applications.

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