

Dual Layer Transfer Process

Dual Layer Transfer Process for Silicon-on-Sapphire MOEMS Device

Industry Problem

New applications are evolving for advanced optoelectronic devices which require integrated processing and bonding of multiple substrates of dissimilar properties, including substrate material, thickness, electrical and optical properties.

Axis Solution

As an example of possible solutions, Axis Technology has developed a process that incorporates a thin-silicon-based opto-electronic device fabricated on a traditional silicon substrate, which is then permanently bonded to a transparent sapphire substrate for device packaging onto a rigid, transparent substrate with suitable optical and mechanical properties. This application combines multiple CMP steps, advanced wafer thinning processes, and both temporary and permanent bonding processes in order to achieve a thin optoelectronic device wafer permanently bonded to a transparent substrate.

