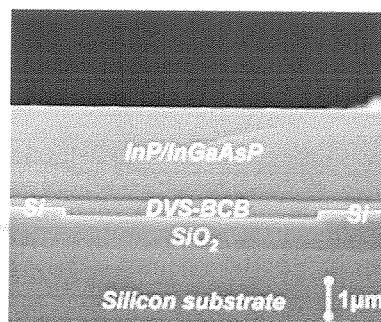


Bonding

Heterogeneous III-V/Silicon Photonics: Bonding Technology and Integrated Devices

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Silicon photonics is emerging as a disruptive technology for passive integrated optical functions and for active optical functions like light modulation and switching. The integration of light emitters and photodetectors operating at telecommunication wavelengths onto the Silicon-on-Insulator material platform is however hampered by the indirect band gap of Silicon. As this is a rather fundamental issue, these optical functions still require the use of III-V semiconductor materials, supplying state-of-the-art opto-electronic components for the

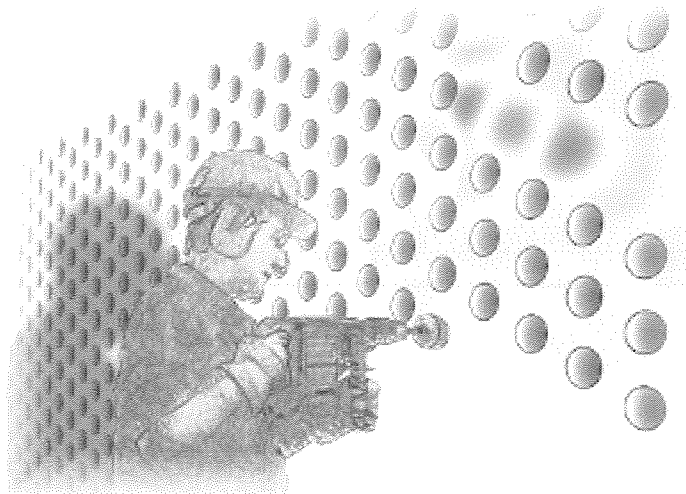


telecommunication market nowadays. In this presentation we will outline various technologies for integrating these III-V semiconductors on top of the SOI waveguide circuit and give an overview of the demonstrated components on this heterogeneous III-V/Silicon platform, which- we believe- could become a dominant platform for the fabrication of complex active/passive photonic integrated circuits.

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