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**Integrated Ge laser for silicon photonics platform**

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The exponential increase of data transfers and requirements have produced difficult constraints that silicon photonics is posed to solve. The integrated platform of silicon photonics. In this ecosystem one of the main barriers is the fabrication of integrated transceivers, which translates into lasers on Si. A material proposed is germanium. Growth techniques, laser design and theory are demonstrated concluding in the creation of a 0.2% biaxial strain and highly n-type doped Ge laser exhibiting gain  $> 1000 \text{ cm}^{-1}$ .