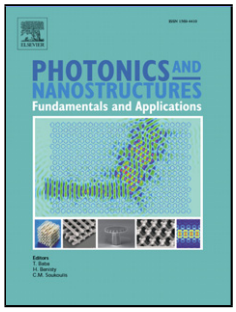

Title: Surface trimming of silicon photonics devices using controlled reactive ion etching chemistry

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Manuscript Highlights

- Surface trimming of SOI rib waveguides has been carried out successfully without significant increase of propagation loss.

- An empirical model has been developed to obtain the resulting trimmed waveguide geometries.

- The trimming technique has been used to demonstrate smaller footprint devices like MMI based power splitters and ring resonators.

- Successfully fabricated 2D tapered spot-size converter useful for monolithic integration of waveguides with varying heights and widths.

- Minimum insertion loss of such a spot-size converter integrated between waveguides with 3-µm height difference has been recorded to be ~ 2 dB.