



UNIVERSITÀ DEGLI STUDI DI TRENTO

DEPARTMENT OF PHYSICS
DEGREE IN PHYSICS – LAUREA IN FISICA

THESIS

Thermal tuning of phase-matching
in a multimodal SOI waveguide
with $\chi^{(3)}$ non linearity

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Abstract: study of degenerate Four-Wave Mixing phenomena in a rectangular silicon-based waveguide. Analysis of its behaviour at different temperatures to maximize phase-match. Development of a project to build an actual prototype.