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Crystalline Grating-Waveguide Resonant reflectors

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We report the fabrication and first demonstration of crystalline grating waveguide reflectors comprising a Sc2O3 waveguide grown on a sub-wavelength-patterned sapphire substrate. Operating in the 1- and 2-micron regime, distinct TE- and TM-polarisation resonances were obtained, with reflectance approaching 50% at ˜7◦ incident angle from a single waveguide and GWS.

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