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Patterned Fabrication of Dielectric Nanowaveguides[1] CHELSEA HOWARD, PATRICK DELEAR, HUIZHONG XU, San Francisco State University — Strong transmission of visible light through dielectric nanowire waveguides has been previously demonstrated with 40-nm-diameter zinc oxide waveguides in a silver film. However, the chemical synthesis methods used to fabricate the waveguides prevent the controllability of size and distribution, within the nanowaveguide arrays. In this work, we utilize Electron Beam Lithography (EBL) and Reactive Ion Etching (RIE), to fabricate dielectric nano pillars of titanium dioxide and silicon nitride. The optical properties of these nano pillar waveguides will be used to make devices for nanoscale imaging and spectroscopy applications.

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