NanoPhotonics: From Photonic Crystals to Plasmonics

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Abstract. *Engineering design is sometimes inspired by Nature. The natural world is filled with crystals, periodic structures that interact with electron waves. Drawing on this analogy, photonic crystals are artificial periodic structures that are intended for electromagnetic waves instead. Such nano-photonic structures are now being designed and patterned into Silicon-on-Insulator (SOI) to provide for commercial nano-photonic integration, as a component part of conventional CMOS circuits.*

Further optical frequency miniaturization will take us toward nano-plasmonics, metallic-wired electrical circuits, running at optical frequencies.