

CMOS compatible disruptive materials to enhance the performance of silicon photonic devices

Abstract

The implementation of new disruptive materials is a key to overcome the challenging requirements in current photonic systems. Among them, VO₂ and strained silicon have been studied as CMOS compatible approaches to enhance the performance of optical devices due to their particular characteristics. Hybrid VO₂-silicon technology could provide new functionalities to the silicon platform thanks to its sharp metal-insulator transition. On the other hand, strained silicon could enable the nonlinearities without having to relay in any other technology.