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Californian Researchers Build First Silicon Laser

“After years of frustration and failed attempts, scientists have finally found a way to make silicon lase. The breakthrough is important because it paves the way for integrating lasers and electronics together on the same silicon chip. Currently, the two are made separately, as today's semiconductor lasers are based on materials such as GaN and GaAs.”

“Now researchers from the University of California at Los Angeles, US have brought the dream of unification one stage closer by constructing the world's first silicon laser (Optics Express 12 21). The prototype device emits picosecond pulses in the near infrared (1.68 μm).”

“Their success hinges on taking a different approach to others in the field. While other researchers have obtained light emission (but not lasing) from silicon by either doping it with erbium or riddling it with tiny holes, Ozdal Boyraz and Bahram Jalali decided to investigate the possibility of using the Raman effect.”