

# A New Compact Embedded Laser Source for Emerging Applications

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## Abstract

Compact and lightweight laser sources delivering short pulses with controllable repetition rates have broad applications in scientific research, biomedicine, sensing, and industrial processing. However, current commercially-available pulsed lasers exploit conventional techniques with high power consumption which makes the laser system very bulky. The objective of this project is to develop a new portable actively pulsed laser technique with improvements in speed, control, and efficiency to enhance laser-related technologies and emerging applications. The proposed technique employs a fast optical switching approach to generate laser pulses with simple driving electronics, enabling a compact size and low cost, while maintaining all the parameters of performance required by applications in clinical treatments, measurements and information technology.

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