



## INTEGRATED PROJECT

# "COMPACT ULTRAFAST LASER SOURCES BASED ON NOVEL QUANTUM DOT STRUCTURES"

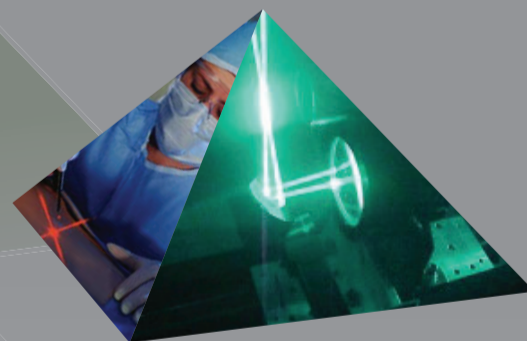


## OBJECTIVES

- Develop quantum dot (QD) based laser technology to deliver compact, inexpensive, high-performance laser sources and devices, in a broad spectral range.
- Provide new affordable photonics devices and supporting knowledge to enable widespread development of Biophotonics applications.
- Apply the unique properties of QD-based ultrafast lasers to provide benefits in already existing Biophotonics applications.

## PROTOTYPES

- Monolithic edge-emitting mode-locked (ML) lasers with average output power exceeding 50mW and sub-picosecond pulse duration.
- Novel compact high power (>100mW) and ultra-broadband tuneable (>150nm) laser sources.
- A new generation of electrically and optically-pumped CW and mode-locked vertical extended-cavity surface-emitted lasers (VECSELs).
- Ultra-compact high-power ultrashort pulse solid-state and fibre lasers based on QD semiconductor saturable absorber mirrors (SESAMs).
- Laser microsurgery and imaging systems for biological samples based on novel QD laser technology.



[www.fast-dot.eu](http://www.fast-dot.eu)