

Swap Laser

Laser frequency conversion



Solid-state laser gain medium for frequency conversion

KEYWORDS

Pulsed laser
Dye-doped solid state laser
Spectroscopy (source)
Frequency converter

IP

European
 Patent application
EP16305467
 filed on April, 21st 2016

LAB

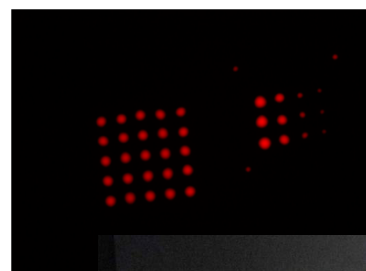
L. De Cola
 ISIS
 UMR 7006
 Strasbourg, FR

M. Flury
 ICube
 UMR 7357
 Strasbourg, FR



TECHNOLOGY

- Polymer based medium doped with standard optical dyes
- Intrinsic micro-cavities
- Pulsed laser or optical source
- Narrow monochromatic output light beam
- Up to 100 Hz and 0.1mJ/pulse without cooling
- Pulse duration: down to 50ps
- Emission efficiency between 30% and 40% with emission threshold of 5µJ/pulse



Shapable laser medium

APPLICATIONS

- Frequency converter for laser source (Nd:Yag, fiber laser...)
- Beam splitter and converter
- Tattoo removal (additional wavelengths)
- Beamer / laser display
- Spectroscopy (source), detection of pollutants

ADVANTAGES

- Based on standard optical dyes: can be tuned to any available wavelengths (UV-Visible-NIR)
- Curable polymer : can be efficiently shaped (with parallel curing process) to any size and shape from a few µm to a few cm or deposited on flexible films, fiber end...
- Low cost manufacturing processes widely used in the semiconductor industry
- Low cost material: around 0.1€/cm²
- No need for optical resonator

DEVELOPMENT STATUS

- Characterization of medium with laser source Nd:YAG and about 20 different dyes from UV-visible and IR emission
- 18-months project funding for a proof-of-concept

Partnership: *Looking for a license-taker / co-maturation partner*

Parc d'Innovation

650 Bd Gonthier d'Andernach
 67400 ILLKIRCH - FRANCE

www.satt.conectus.fr

CONTACT

Veronika Vallion
 Business Developer

Tél. : +33 6 10 07 00 19 - veronika.vallion@satt.conectus.fr