monocrom
Crafting ideas into light

EPIC
European Photonics Industry Consortium

Ophthalmology applications

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Online Technology Meeting on Ophthalmology

29-06-2020

Who are we ?

Since 1993, we have been developing and producing lasers from Vilanova I la Geltru, 30 km. south of Barcelona city. From here we serve the EMEA, South America and Asia Pacific markets.

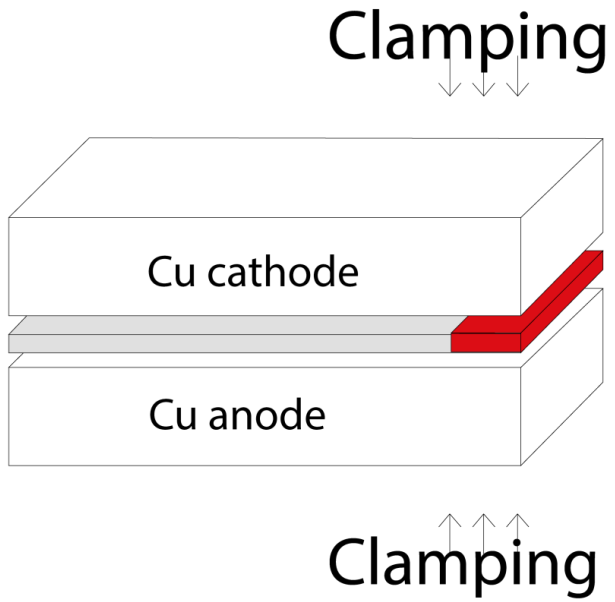
Clamping™ - Solder-free Laser Bar Mounting Technology

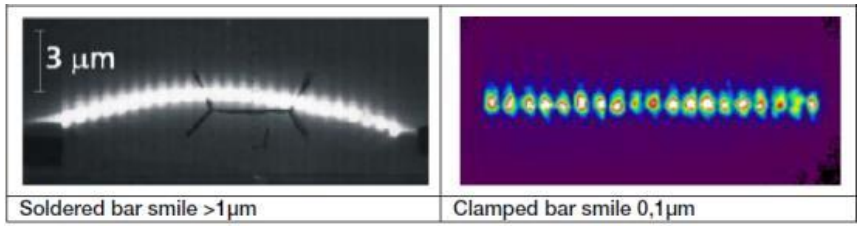
Clamping™

Solder-free Laser Bar Mounting

While soldered bars present series of problems as thermal expansion mismatch, high temperature process, fatigue effect with consequent lifetime reduction, our Clamping™ technology overcomes all these troubles thanks to the total elimination of the soldering process

- **Patent EP1341275B1**
- **For exclusively use of Monocrom**





Clamping™ Advantages

Clamping Driven

- Avoiding the “smile” effect
- Mounting at room temperature
- Insensitive to CTE mismatch
- Having no mechanical stress
- Using real macro-channels
- Cooling from both sides of the semiconductor
- Achieving longer life-time

Applications

Medical

- Dermatology
- Aesthetics
- Spectroscopy
- Ophthalmology
- Cancer treatment

Industrial

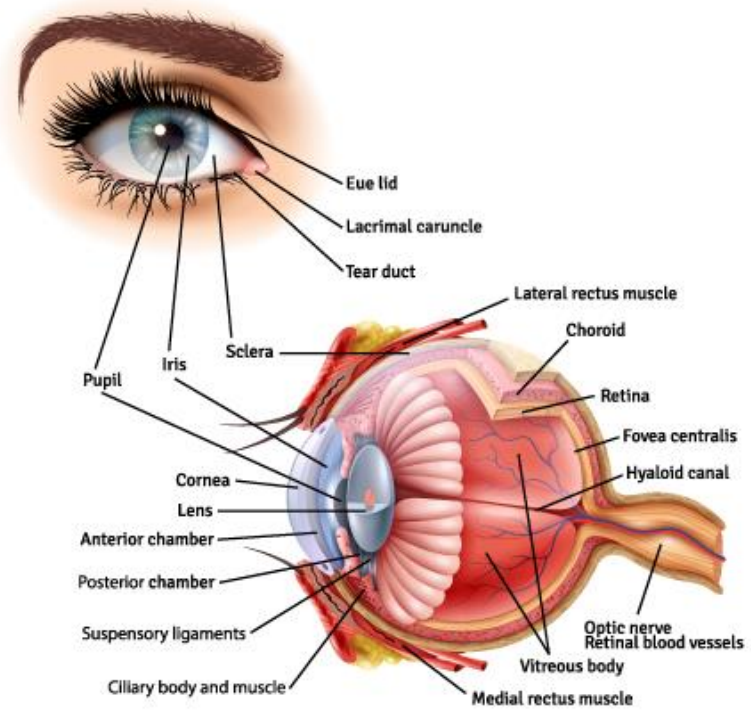
- Imaging
- Material processing
- Optical pumping
- Sensing for food industry

Defense

- Security and target acquisition
- Optical pumping
- Light detecting and ranging

Our solutions are focusing on these treatments

- Glaucoma Treatment
- DME-Diabetic Macular Edema
- AMD- age-related macular degeneration
- RPE (Retinal Pigment Epithelium) stimulation

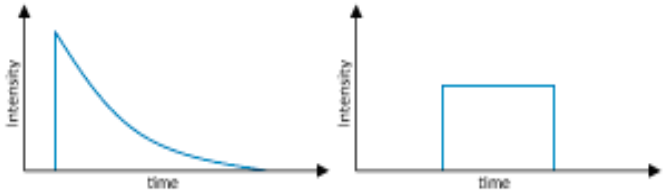


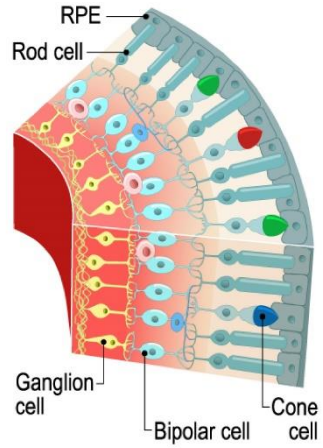
Our solution will be integrated into systems relieving pressure in the back of the Retina on the RPE layer

SRT- Selective Retina Therapy

LQ 527-12	
Wavelength	527nm
Pulse energy	Up to 1mJ
Beam Quality [M^2]	<1.5
Pulse length	1.7µs
Repetition rate	Up to 200Hz

- Selectively damage the RPE
- Minimum affect on the neural retina, the photoreceptors and the choroid.
- Stimulating RPE cell migration and proliferation in order to improve the metabolism at the diseased retinal sites.





SECTION OF RETINA

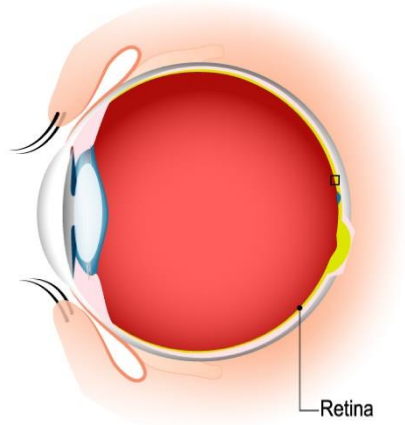
Multipath resonator

MP532	
Wavelength	532nm
CW peak power	12W
Beam Quality [M²]	<1.7
Repetition rate	1Hz to CW
Output type	Free beam or 50µm fiber output

- DME-Diabetic Macular Edema
- AMD- age-related macular degeneration
- Cost affective solution
- Simple implementation

Power [mW]	100				150			
Spot size [µm]	50		100		50		100	
Duration [Sec]	0.1	0.05	0.1	0.05	0.1	0.05	0.1	0.05
Burn size [µm]	270±4	220±9	230±4	200±6	410±11	270±5	300±9	225±5

*source- https://www.ncbi.nlm.nih.gov/



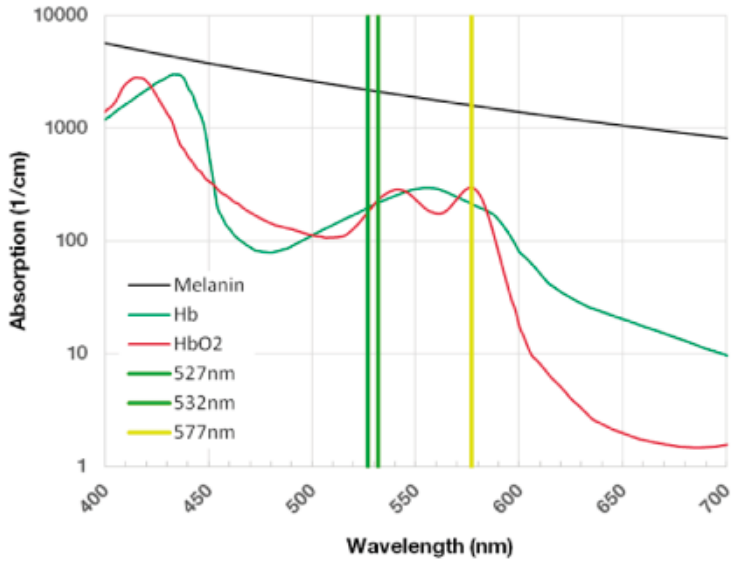
Where next and How can EPIC help us ?

What is next?

- Yellow (>570nm) with the same performance envelope
- Improving beam quality to minimize the burn effect

How can EPIC help us?

- New collaboration for new researches
- OEM opportunities



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Thank you!

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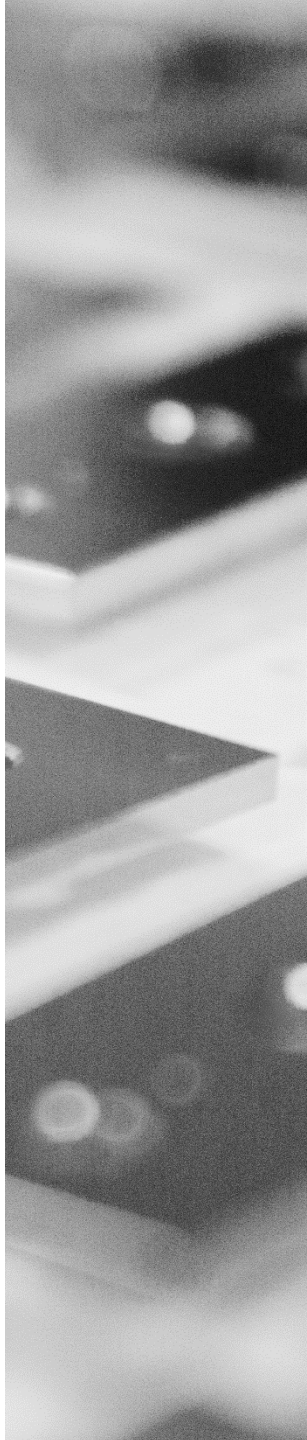
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