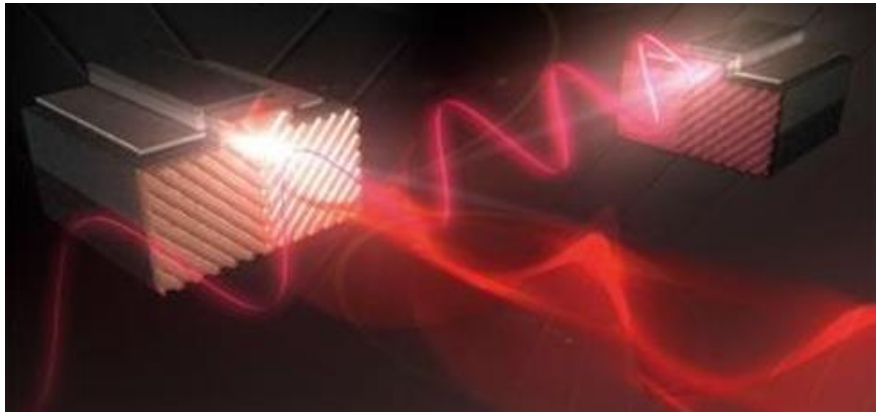
Technology Offer CSIC/ME/019

System for modulable laser pulses with improved length and power



Method that improves the signal properties in ultrafast laser pulse systems, allowing shorter and higher power pulses, which can also be modulated at will depending on the desired use.

Intellectual Property

PCT application filed

Stage of development

Prototype developed and successfully tested in laboratory with a ring laser system

Intended Collaboration

License

Contact

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Market need

Laser systems have widespread applications in today's industries, being present in a large number of sectors such as telecommunications, materials processing, logistics, environmental monitoring, or medicine, among others. Each different use requires specific characteristics of the laser device, but in most cases, a precise control of the pulses or light flows is needed. This is achieved by incorporating control, amplification, polarization systems... which, as a side effect, reduce power and general performance. Therefore, it is desirable to have systems that allow accurate control to be combined with the highest possible power and duration performance.

CSIC solution

Our technology manages to improve the power and duration properties of the laser, allowing the generation of pulses of higher power and shorter duration without compromising the control of the pulses or the polarization. This opens the possibility of new applications that simultaneously require high power and accurate control. It is also a technology that is highly compatible with any existing amplified laser system.

Competitive advantages

- Applicable to any laser architecture that includes doped fiber amplifiers.
- Allows obtaining laser pulses of higher power and shorter duration than current commercial systems.
- Allows the laser signal to be modulated prior to the amplification stage, improving control.