INDEX

1. WHAT WE ACHIEVED

2. HOW WE DID IT

3. HOW I4MS HELPED

4. HOW WE WILL TAKE IT FORWARD
A new picosecond laser: changing the way we design and manufacture technologies of the future

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WHAT WE ACHIEVED

1342 nm picosecond laser

New design of picosecond laser
- > 10 W mean output power
- repetition rate from 80 to 300 kHz
- full control of pulse number and energy
- synchronization with external devices, such as polygon scanners
- laser validation at CPSTC in selective ablation for thin-film photovoltaics for Flisom and Abengoa started
- To widen potential applications of the new picosecond laser, a full set of harmonics was also realized
HOW WE DID IT
More than year of intensive work…

- The work was done on the basis of previous experience with custom laser emitting at 1342 nm. The challenge - meeting the needs of an industrial application: high mean power, high repetition rate, precision, and exceptional laser control.
- After one year of modelling and experimenting the new laser for micromachining was created;
- The second harmonics at 671 nm and the third harmonics at 447 nm was demonstrated.
HOW I4MS HELPED
From Project to real world applications

- Collaboration with partners in European projects and support from EU for RTD activities allows EKSPLA to stay on the top of laser manufacturers, adding new jobs and production facilities.

- Financial support reduces risks of creation of lasers with non-standard wavelength.

- Outcomes of the APPOLO project will open new industrial market niches for ultra-precise and cost-effective material processing with benefits to the company and its customers.
HOW WE WILL TAKE IT FURTHER

New R&D labs, turnover grows, new working places

Recent achievements through APPOLO enable

- new R&D facilities > 300 sq.m.
- clean room with 5 laboratories
- new mechanical shop for prototyping
- new test equipment

- We foresee that it will result

- in more than 50% increase in turnover
- more than 20 qualified specialist employment at Ekspla in the next 3 years
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THANK YOU FOR YOUR ATTENTION