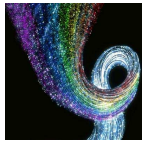
FIREFLY

Multilayer Photonic Circuits made by Nano-Imprinting of Waveguides and Photonic Crystals

GA nr 287874

Presentation outline

- **General info and Consortium**
- **Motivation and Main Objectives**



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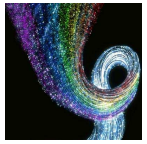
General Information

- **FP7 - Call 7. Objective 3.5**
- **STREP**
  - Total costs: 4.96 M€
  - EC Contribution: 3.42 M€
  - About 354 person-months
- **European Partners**
  - 6 Countries: NL, FI, BE, IE, CH, GE
  - 5 Academic partners, 3 Large industries and 1 SME
- **Duration: 36 months**
- **Starting date: 1st October 2011**
- **Contact details:**
  - **Website: www.fp7-firefly.eu**



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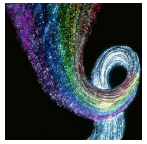
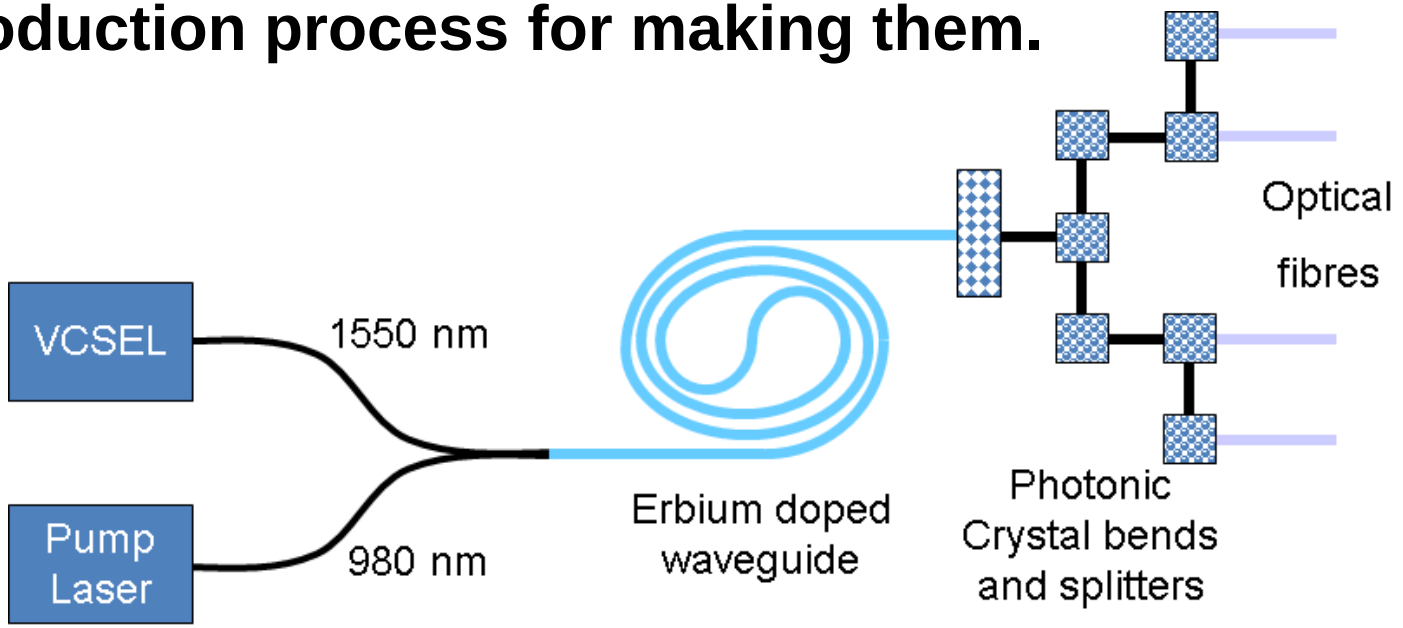
Motivation

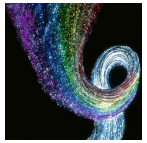
- In the information and communication industry the performance of microprocessors continues to increase.
- Consequently, the data flow to and from the processors has to increase accordingly.
- This has led to the introduction of optical data transmission (e.g. glass fibre) as a replacement of electronic data transmission (e.g. copper wire) in most transmission applications longer than 100 meters.
- **A need remains for optical data transmission for shorter distances**



Main Objective

- **The overall objective of the FIREFLY project is the integration of nano-structured materials into 3-dimensional structured components that will be used for the efficient guiding of light in e.g. optical interconnects for data transmission, and the production process for making them.**





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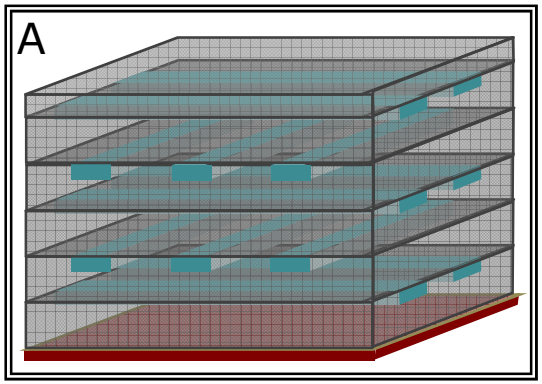
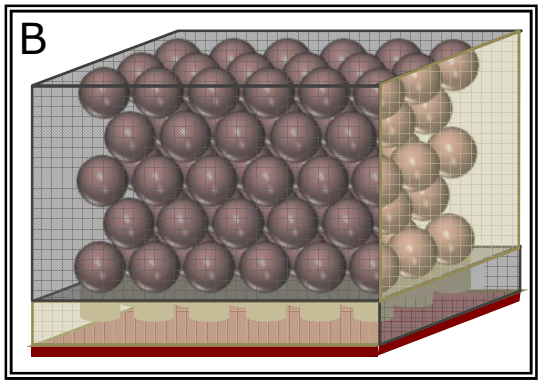
Main Objective

The development of these components will be based on:

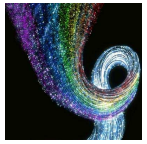
- Design of nano-photonic structures
- Polymeric materials having high transparency
- Monodisperse nanoparticles with a high refractive index
- Nano-imprint lithography as production technology



Waveguides



Photonic Crystals



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