

# Sub-wavelength nanostructures for optical applications



## Description

New and cost effective platform for up-scaling sub-wavelength nanostructures fabrication techniques for optics and automotive industries. It has a huge commercial potential due to its product enhancements.

## Objectives

- To undertake environmental analysis of polymerization process for requested Block CoPolymer (BCP) material platform, to develop it in the best way and assess potential impacts. To define the capital and operational costs associated, to guide optimisation processes,
- To determine end-users' acceptance, and define a strategy to improve Stakeholders' interest and to apply a risks assessment including environmental and safety issues,
- To evaluate legislation and regulations to identify legal constraints.

## Activities

- Sustainability assessment:
  - Life-Cycle Assessment LCA,
  - Life-Cycle Costing LCC,
- Market uptake & sustainable communication:
  - Users' acceptance study,
  - Regulation & standard issues,
  - Risks assessment.

## Challenges

- Input data complex to collect 
- Technical knowledge required 
- Legal & legislation barriers 
- Technology readiness level 

## Expected outcomes

- 100% coatings-free optics manufacturing technology,
- - 50% laser cost-of-use and + 250% of current coated optics lifetime,
- Identification of socio-economic benefits and legal barriers,
- Comprehensive actions plan to succeed social acceptance,
- Risks identification and mitigation plan.

