Efficient and functional optical frequency conversion in 3D Nonlinear Optical Artificial Materials

Fact Sheet

Project Information

3D NOAM
Grant agreement ID: 101044797

Funded under
European Research Council (ERC)

DOI
10.3030/101044797

Total cost
€ 3 000 000,00

EU contribution
€ 3 000 000,00

Coordinated by
TEL AVIV UNIVERSITY
Israel

Project description

Metasurface-inspired artificial optical materials for optical frequency conversion

Non-linear optical frequency conversion, the conversion of input light to light of other frequencies using optical non-linearities, enables light generation over the entire electromagnetic spectrum. It has been invaluable in many applications. However, it relies on bulk non-linear crystals, which impedes miniaturisation and integration in tomorrow’s increasingly compact and low-energy devices. Inspired by recently developed non-linear metasurfaces, a new kind of 3D nano-engineered non-linear optical material will be developed by the EU-funded 3D NOAM project. The team will
also develop the required nanofabrication technology to support the material's upscaling and commercialisation.

**Fields of science**

- engineering and technology > mechanical engineering > manufacturing engineering
- engineering and technology > materials engineering
- engineering and technology > nanotechnology > nano-materials
- natural sciences > physical sciences > optics > nonlinear optics

**Programme(s)**

HORIZON.1.1 - European Research Council (ERC) [MAIN PROGRAMME]

**Topic(s)**

ERC-2021-COG - ERC CONSOLIDATOR GRANTS

**Call for proposal**

ERC-2021-COG

See other projects for this call

**Funding Scheme**

HORIZON-AG - HORIZON Action Grant Budget-Based

**Coordinator**

TEL AVIV UNIVERSITY

Net EU contribution

€ 3 000 000,00

Address
Activity type
Higher or Secondary Education Establishments

Links
Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network

Other funding
€ 0,00

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Permalink: https://cordis.europa.eu/project/id/101044797

European Union, 2023