

Photoactive polymer composites for the production of biocompatible and immunospecific prosthetic materials

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3-D printing in prosthetics and dentistry

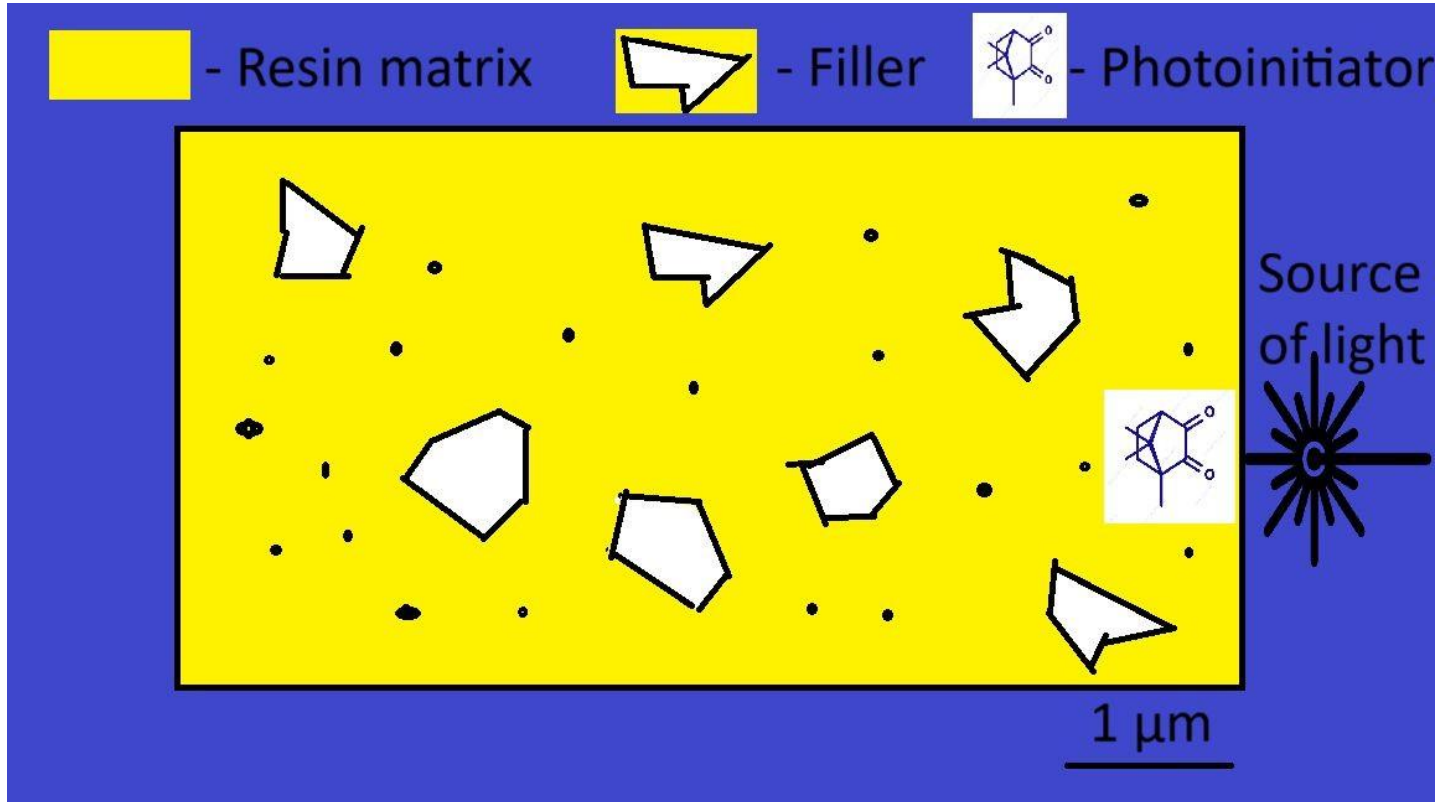


Source: Ars Electronica / Robert Bauernhansl.
“Bone.”, flickr.com, 17 Feb 2025,
<https://flic.kr/p/GLZbXH>



Source: Navy Medicine. “NMCS D Surgeons fit
DOD’s, Calif.’s First Ever Immediate Jaw
Reconstruction with 3D-printed Teeth Patient with
Prosthesis.”, flickr.com, 17 Feb 2025,
<https://flic.kr/p/2m6aYPo>

Photopolymer resin composite



Photopolymer composite

Component	Example
Matrix	Diacrylate copolymers
Filler	Glass, quartz, or polymerized resin particles
Coupling agent	γ -methacryloxypropyltrimethoxy silane
Photoinitiator	Camphoroquinone
Source of light for curing (polymerization)	Quartz-tungsten halogen(QTH), plasma arc, argon laser, LEDs

My previous scientific and technological expertise

We had / have quite a lot of different EU projects, including:

- Horizon2020,
- Horizon Europe,
- NATO project: science for peace

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Types and role of partners you are seeking

We want to create a photoactive polymer resin-based composite, that is biocompatible and immunospecific, suitable for additive manufacturing of dental and orthopedic prosthetics.

We are looking for researchers, who have experience in the production, testing, and standardization of biocompatible and immunospecific composites

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Topics to explore in future Horizon Europe projects

Teaming for Excellence (HORIZON-WIDERA-2025-ACCESS-01):

- 3D printing in prosthetics
- Biocompatible photoinitiators for photopolymer resins
- Biocompatibility testing of photopolymer resins
- Immunocompatibility testing of photopolymer resins

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