

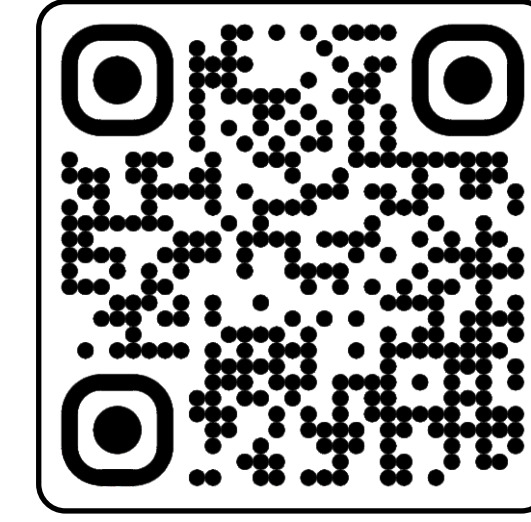
University of Stuttgart  
Germany



# 4<sup>th</sup> Physics Institute

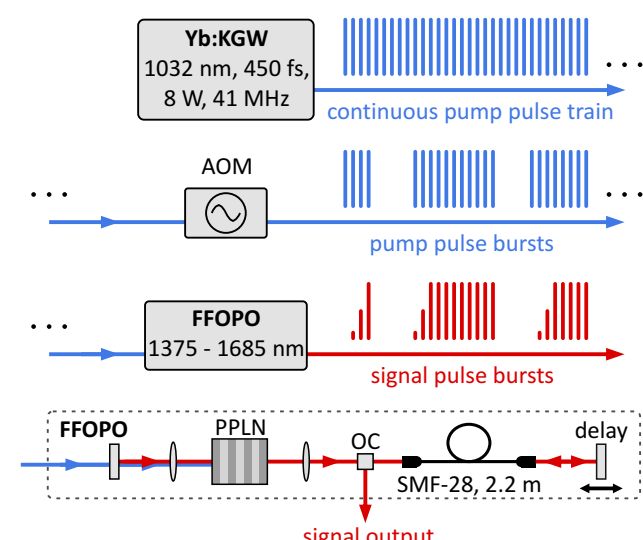
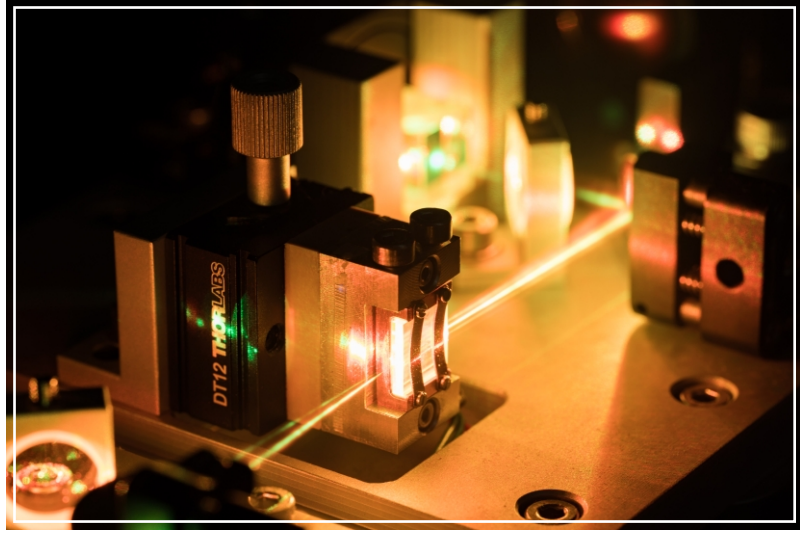


Institute Director: Prof. Dr. Harald Giessen  
Contact: giessen@pi4.uni-stuttgart.de  
Homepage: www.pi4.uni-stuttgart.de

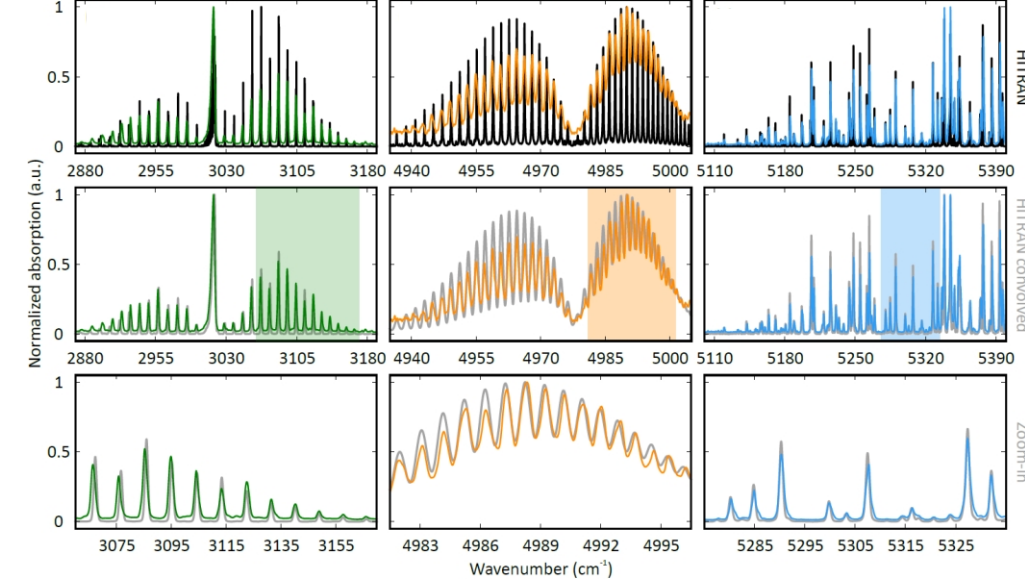


## ULTRAFAST OPTICS

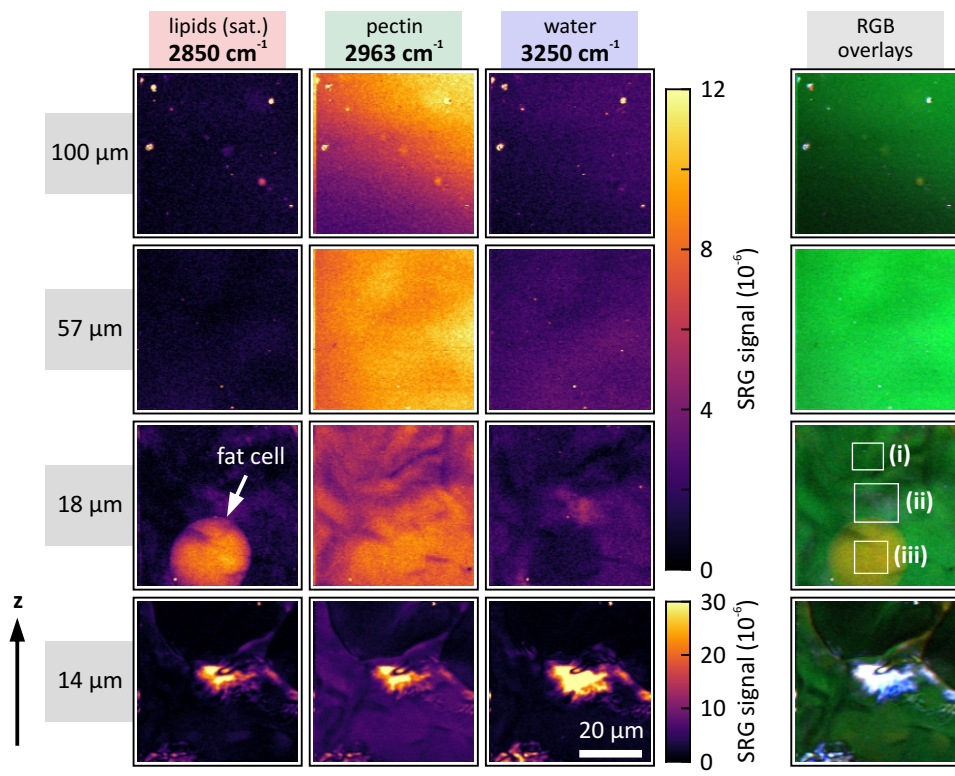
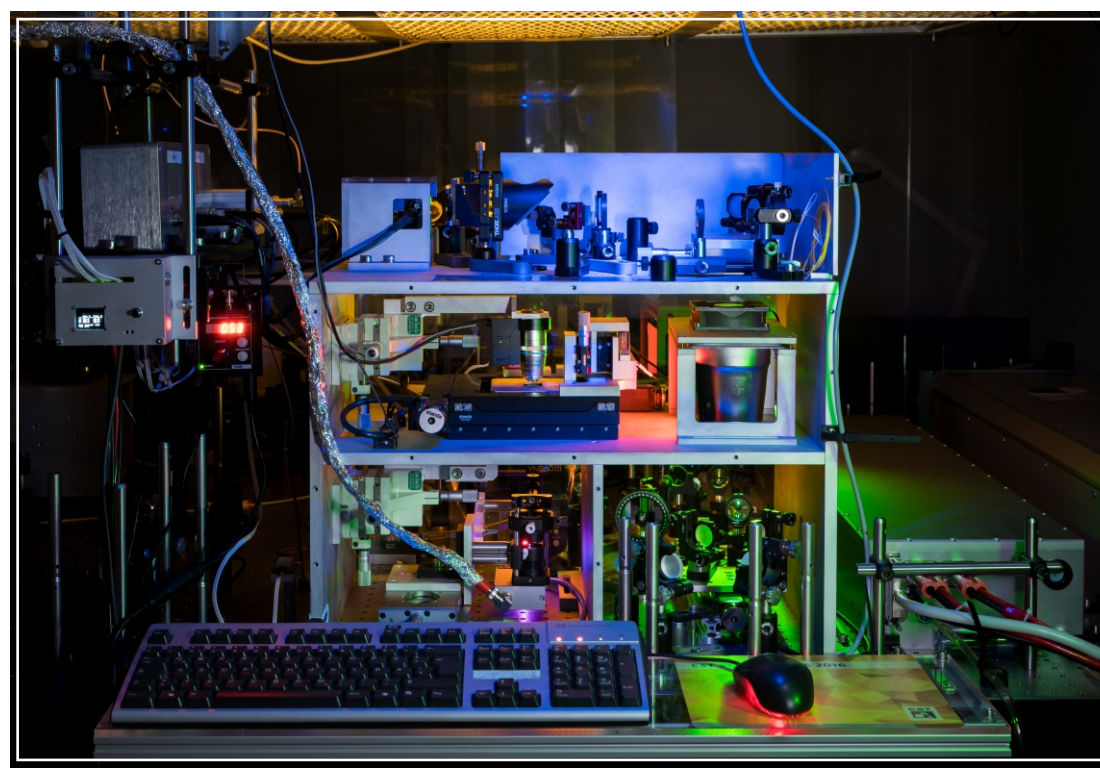
### Nonlinear Laser Physics



### Photoacoustic Gas Sensing



### Stimulated Raman Scattering Microscopy

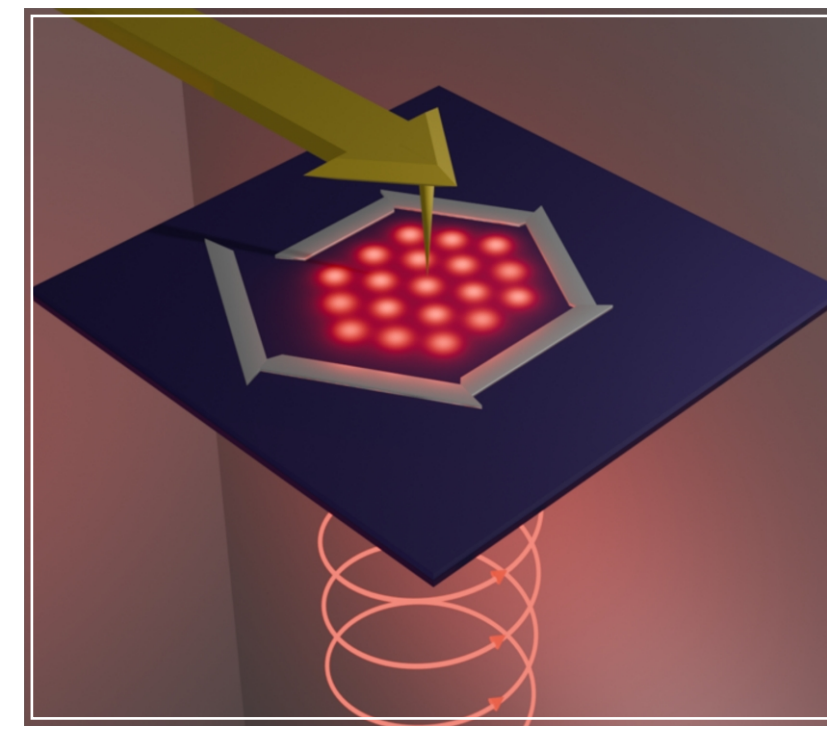


#### Related Team:

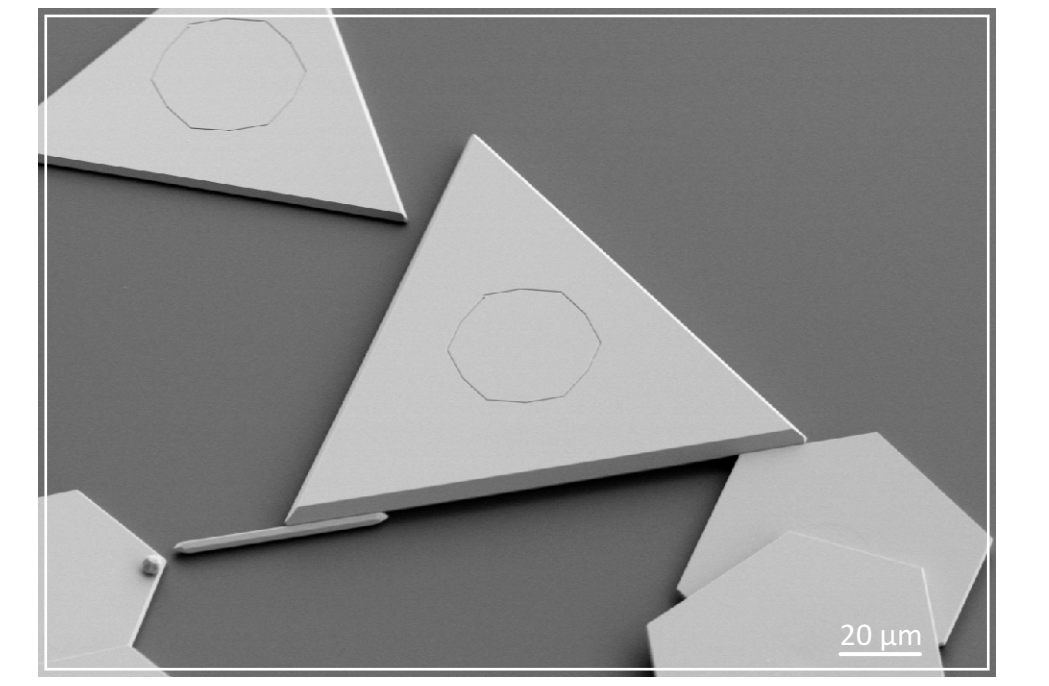
- Tobias Steinle
- Andy Steinmann
- Simon Angstenberger
- Johann Thannheimer
- Thomas Konrad
- Florent Kadriu

## PLASMONICS

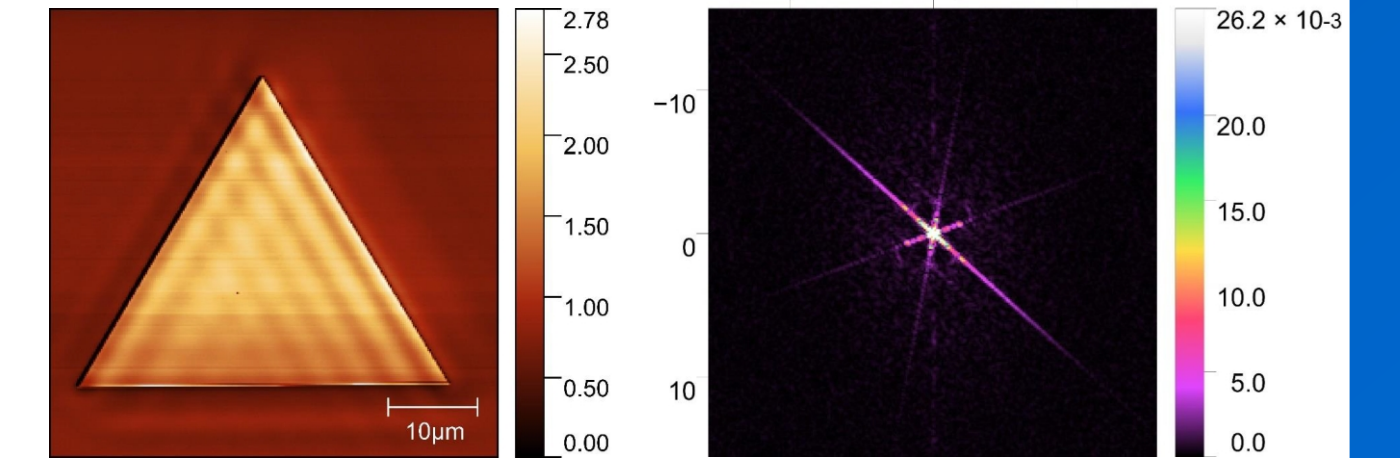
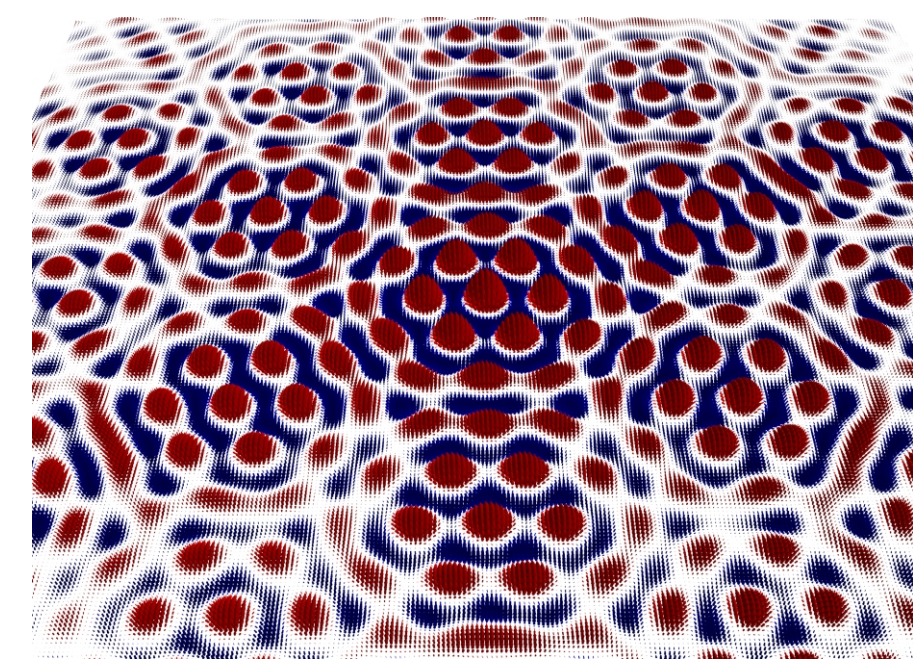
### Scattering Near-Field Optical Microscopy



### Long & Short Range Plasmons



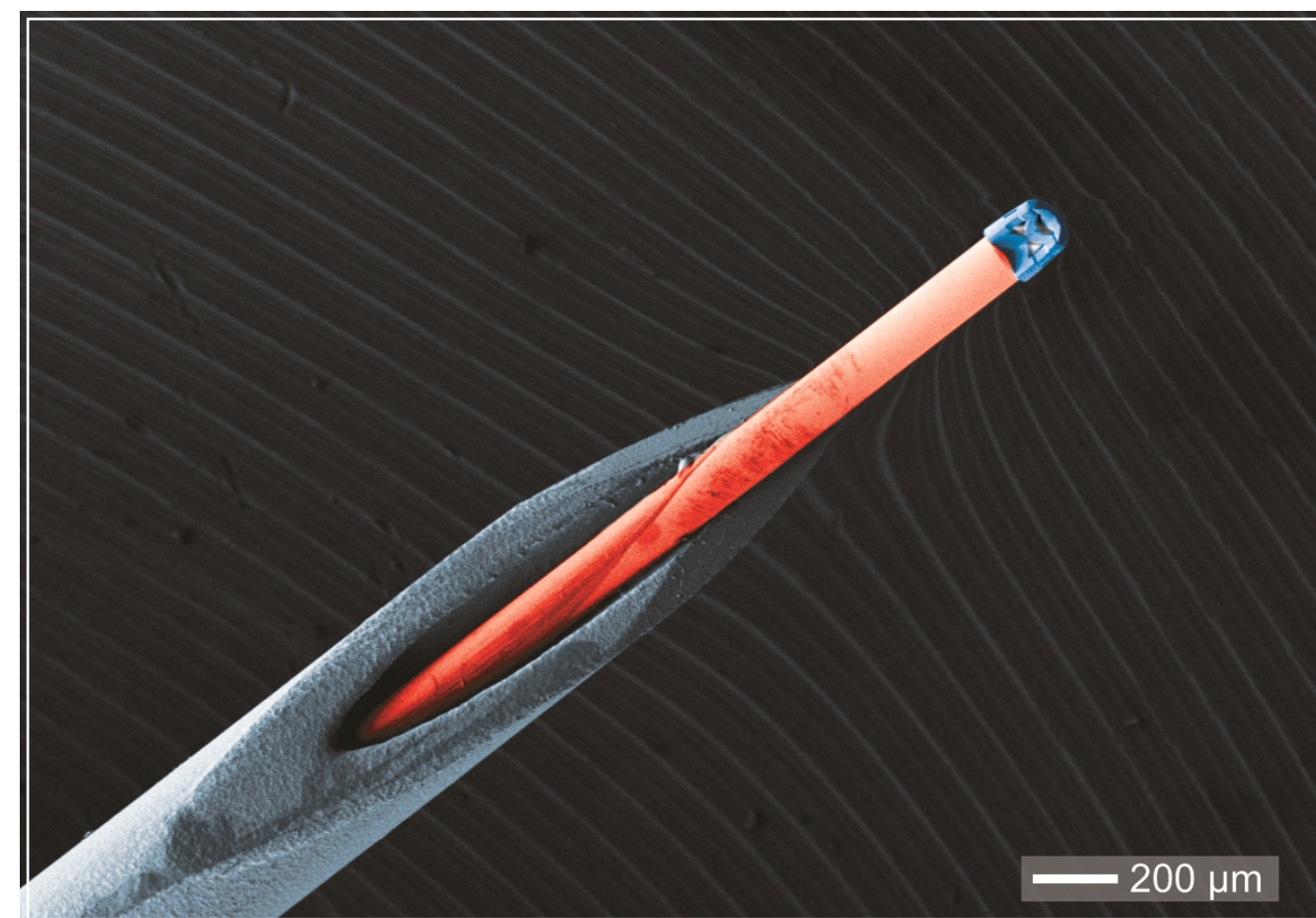
### Skymions



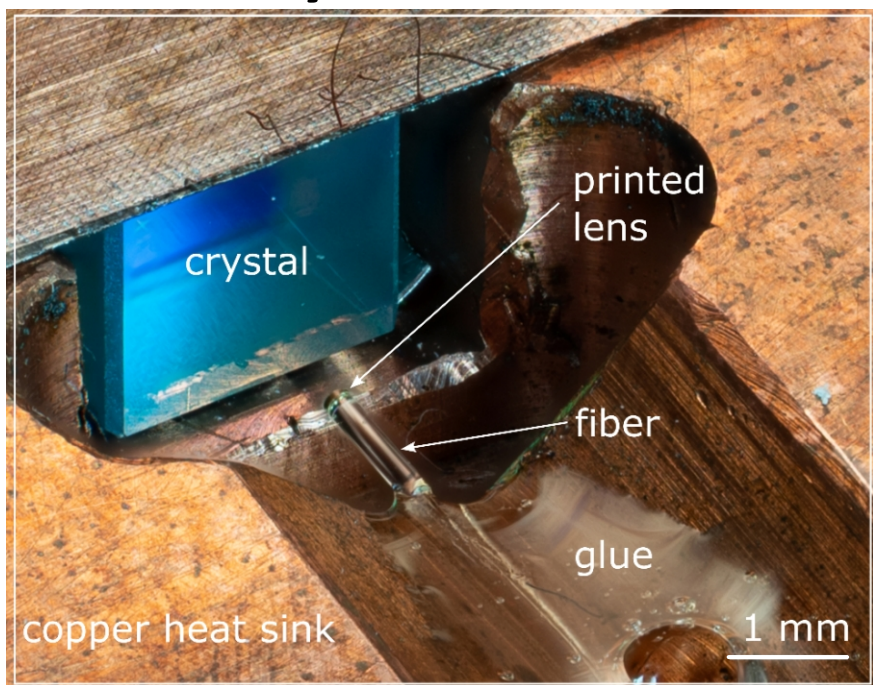
#### Related Team:

- Bettina Frank
- Florian Mangold
- Farid Aghashirinov
- Julian Schwab
- Gayathri Haridas
- Anant Mantha

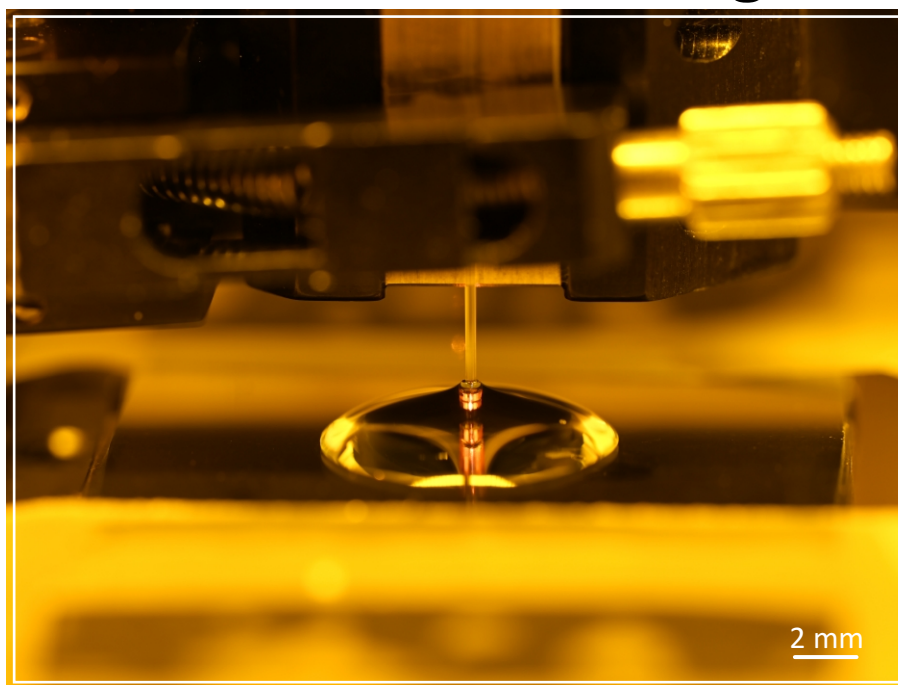
## 3D PRINTED MICROOPTICS



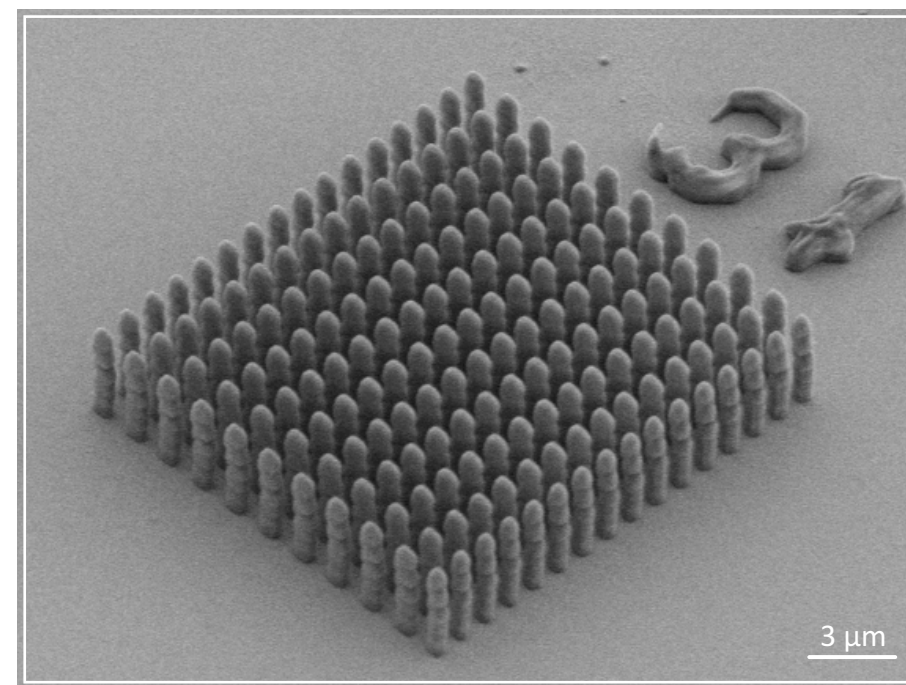
### Hybrid Laser



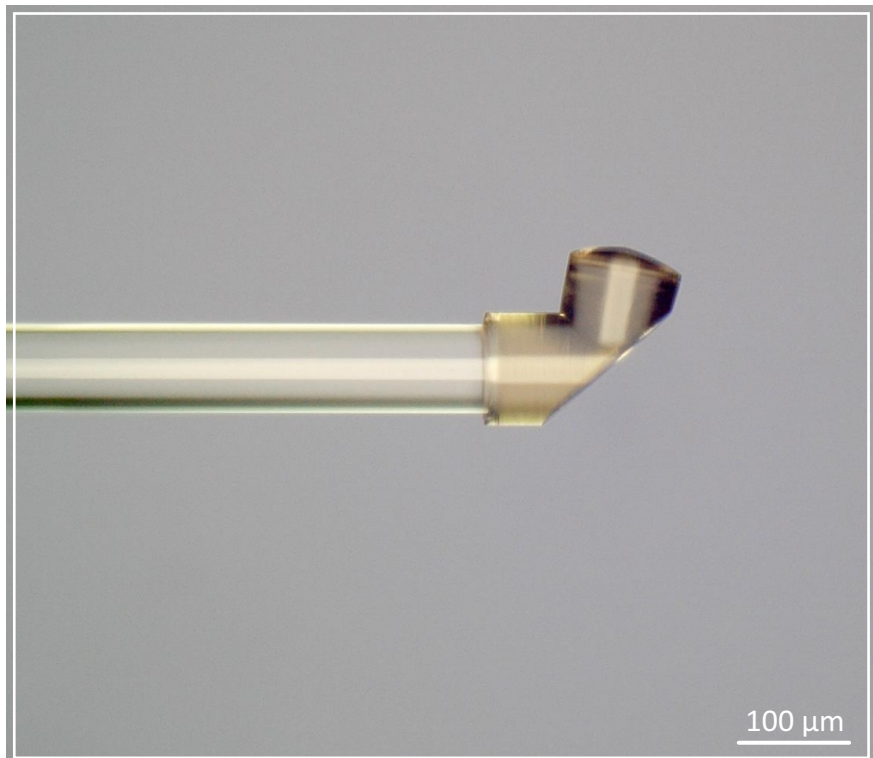
### Fiber Based Printing



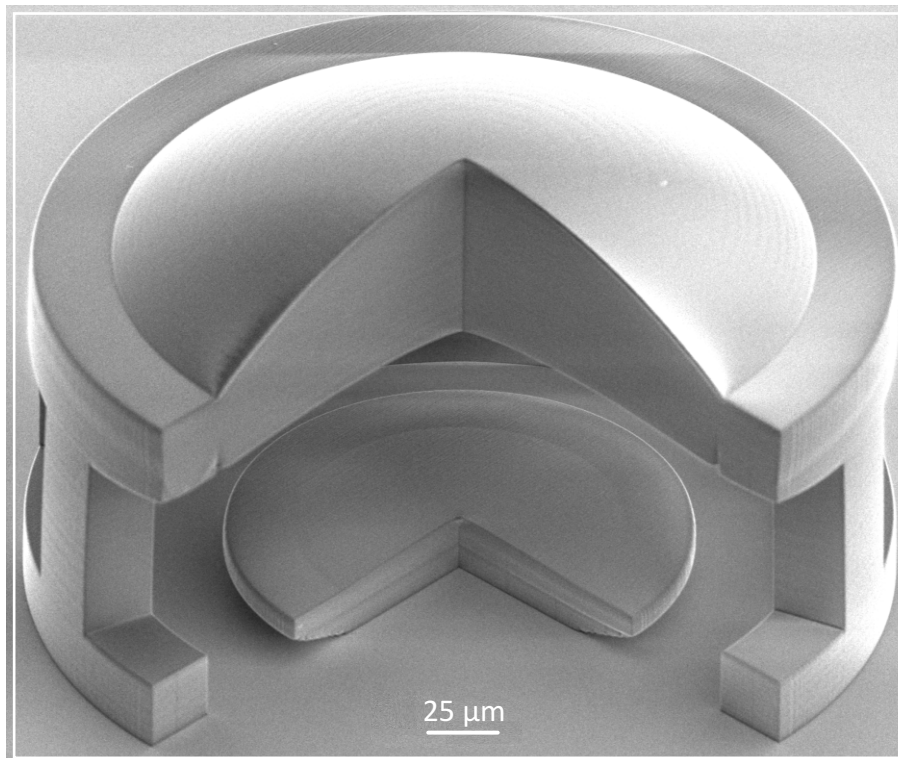
### Metasurfaces



### Fiber Printed Endoscopes



### 3D Printed Optics

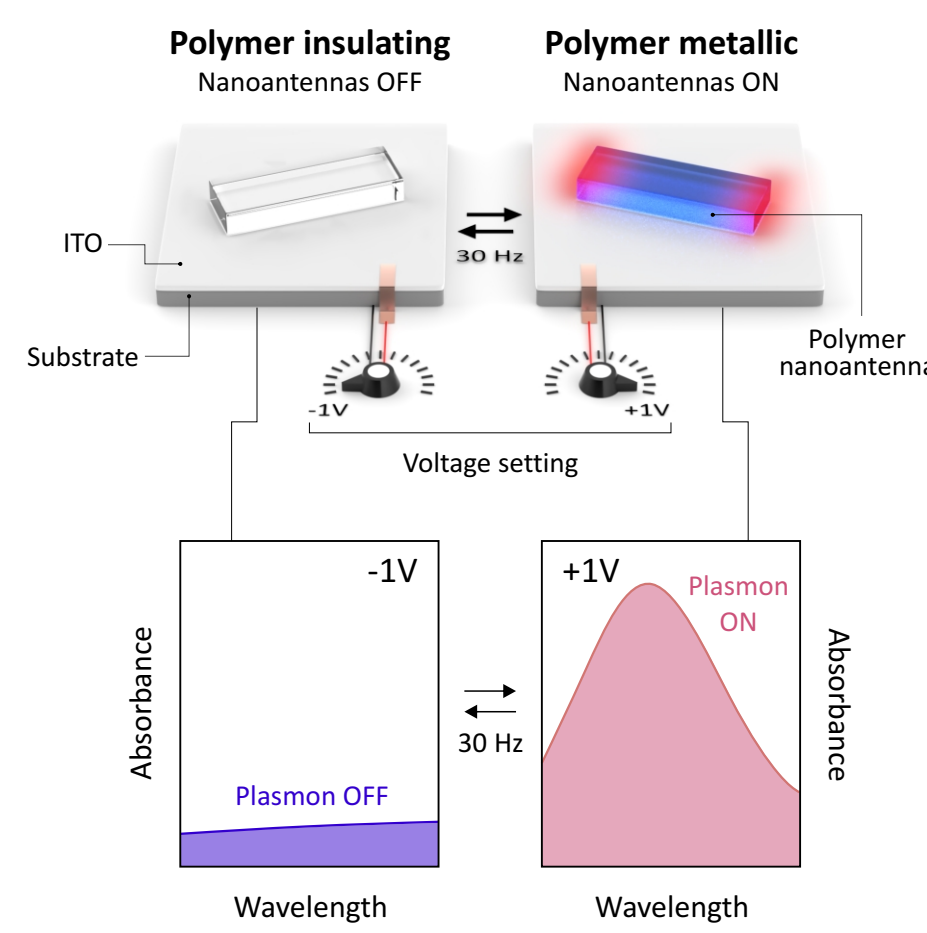


#### Related Team:

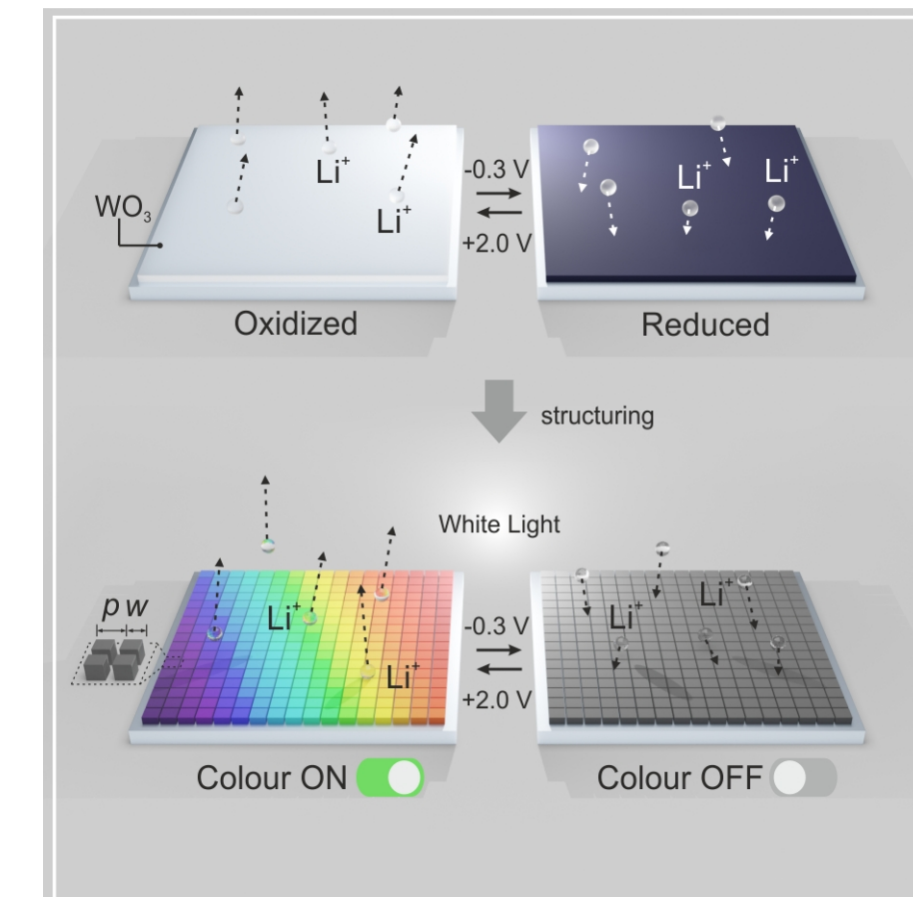
- Pavel Ruchka
- Leander Siegle
- Zihao Zhang
- Yanqiu Zhao
- Lunwei Wang
- Sebastian Klein
- Anton Hellstern
- Sara Jakovljevic

## ACTIVE NANOPHOTONICS

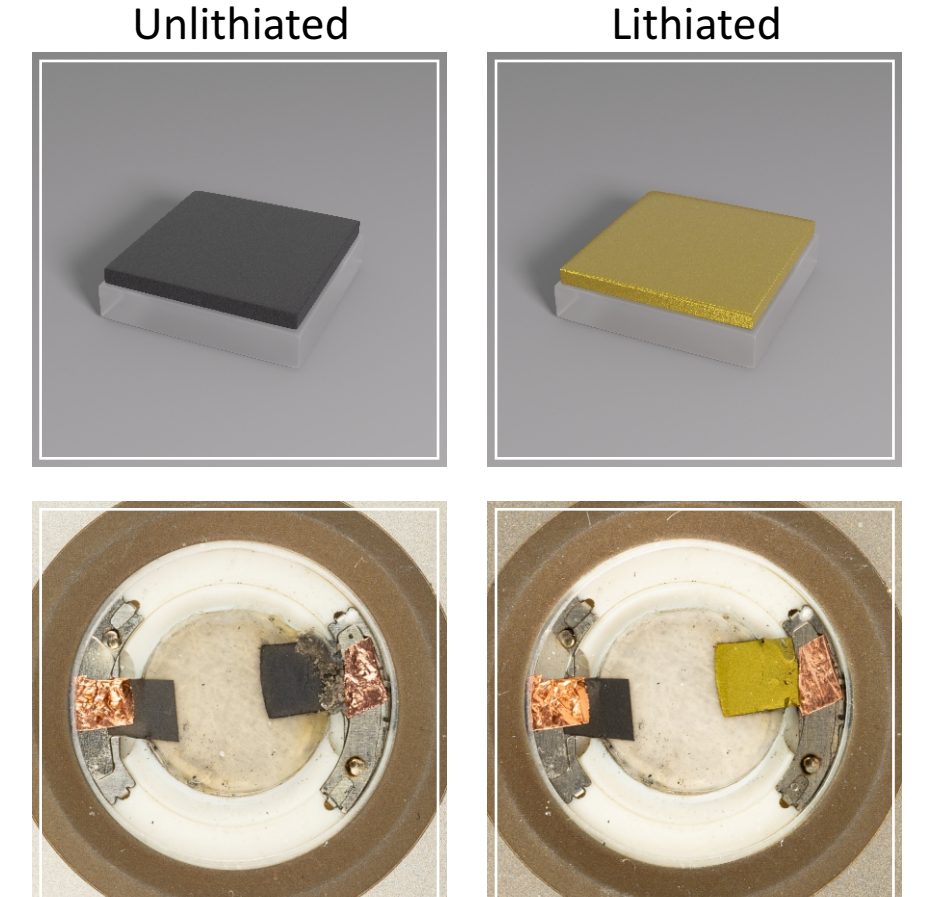
### Conducting Polymer PEDOT:PSS



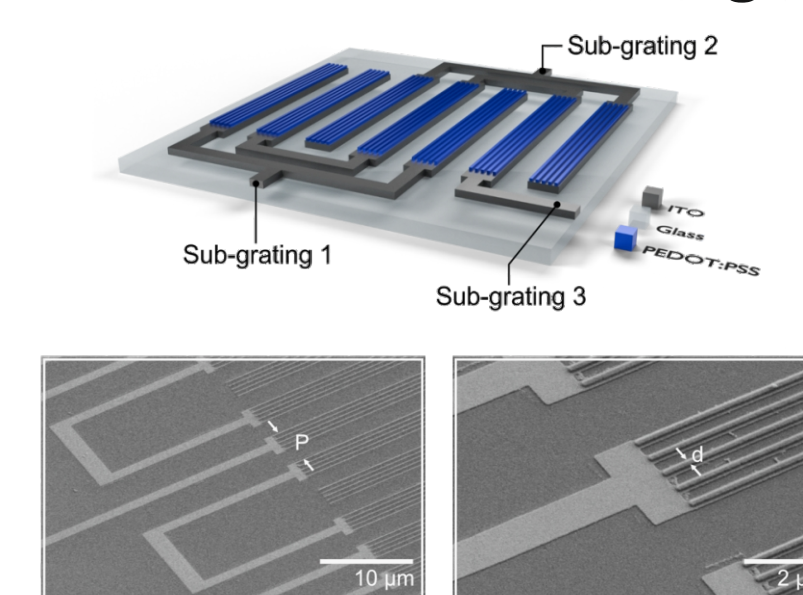
### Inorganic Materials WO<sub>3</sub>



### Carbon HOPG



### Planar Electrode Design

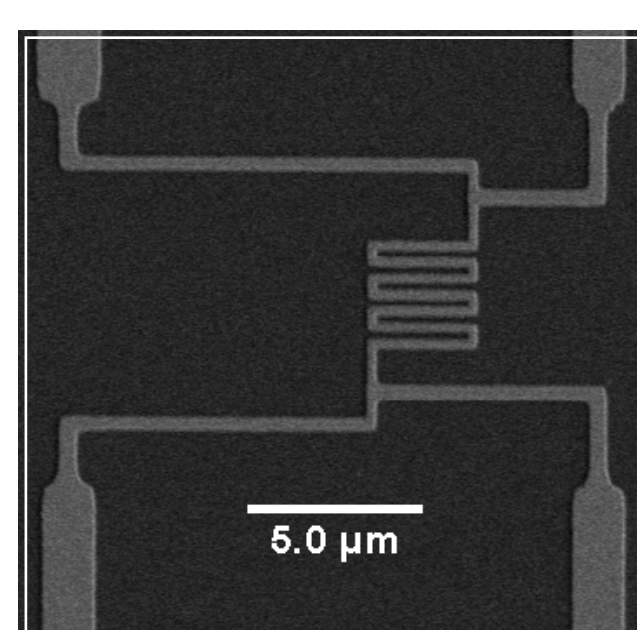
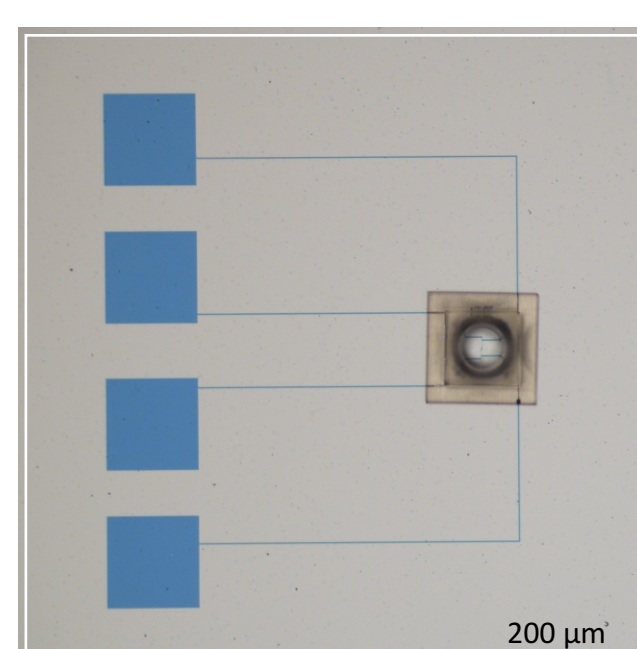
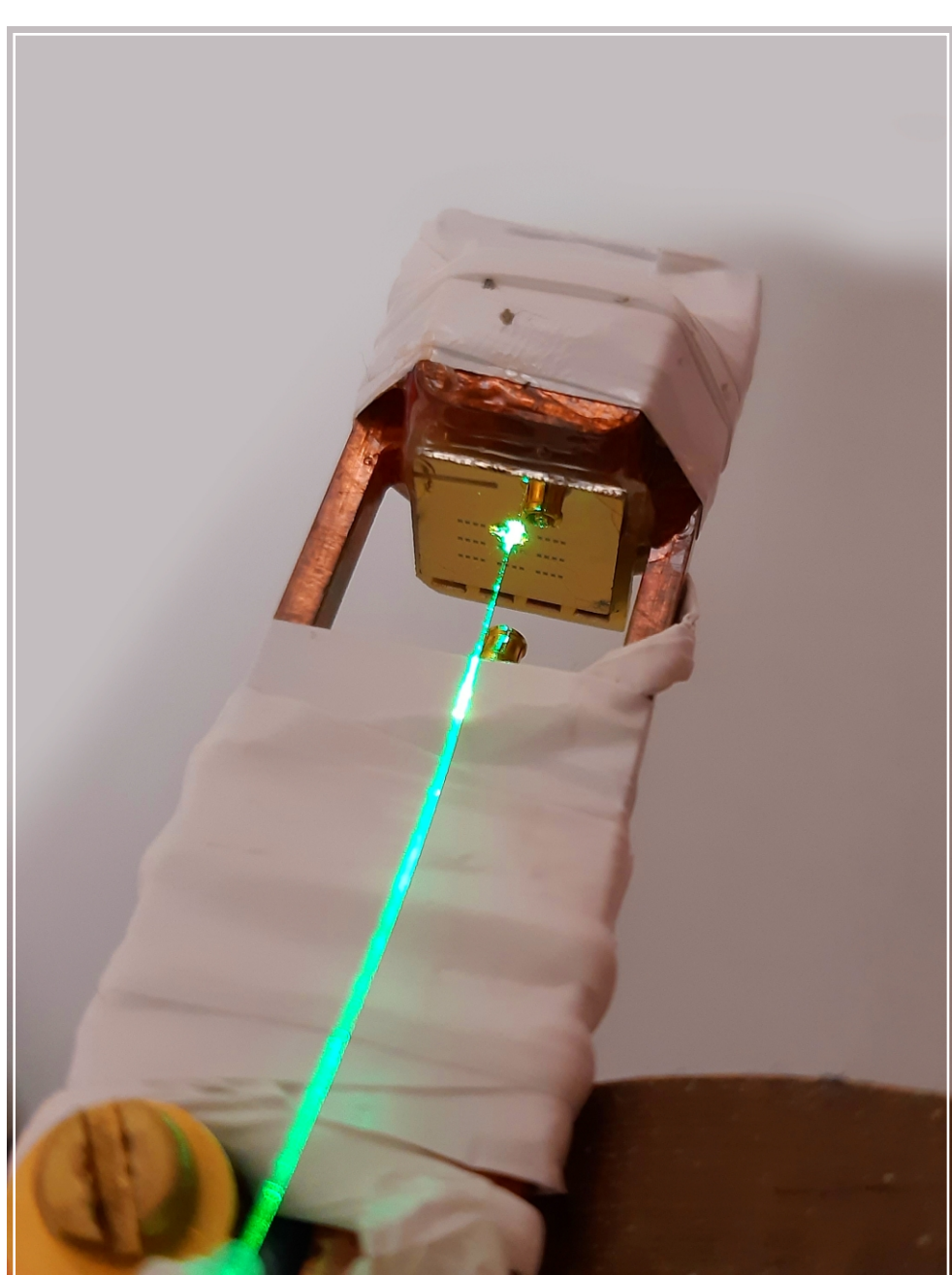


#### Related Team:

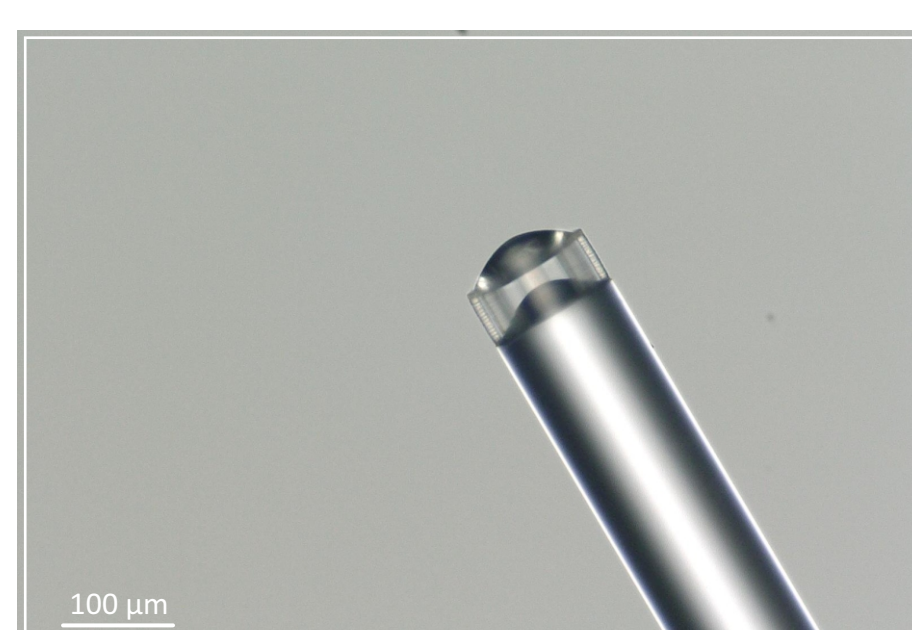
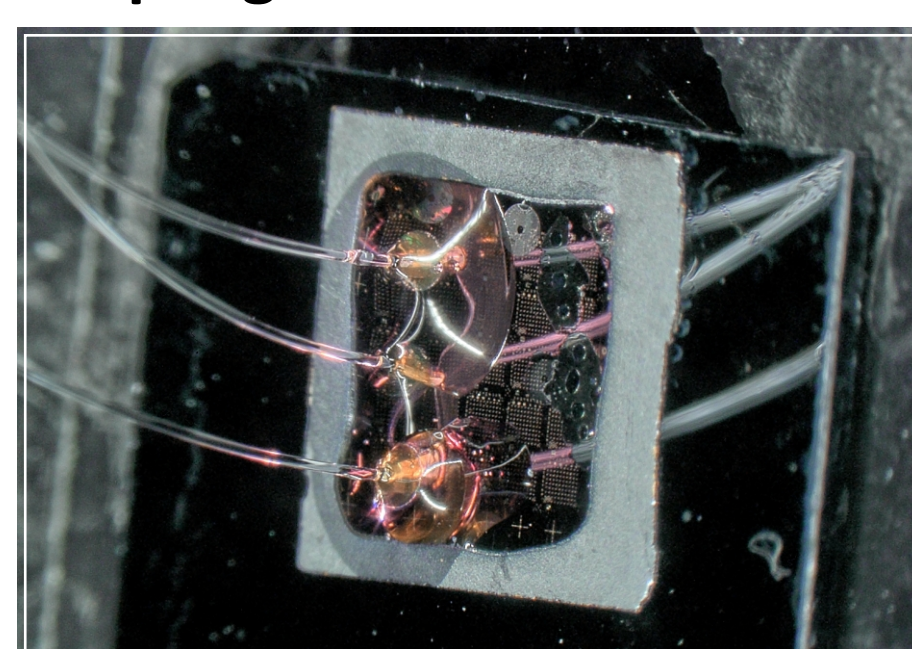
- Mario Hentschel
- Dominik Ludescher
- Valentin Maile
- Zahra Hojjati
- Jonas Herbig

## PHOTONICS FOR QUANTUM TECHNOLOGY

### Single Photon Detector



### Coupling to Quantum Emitters

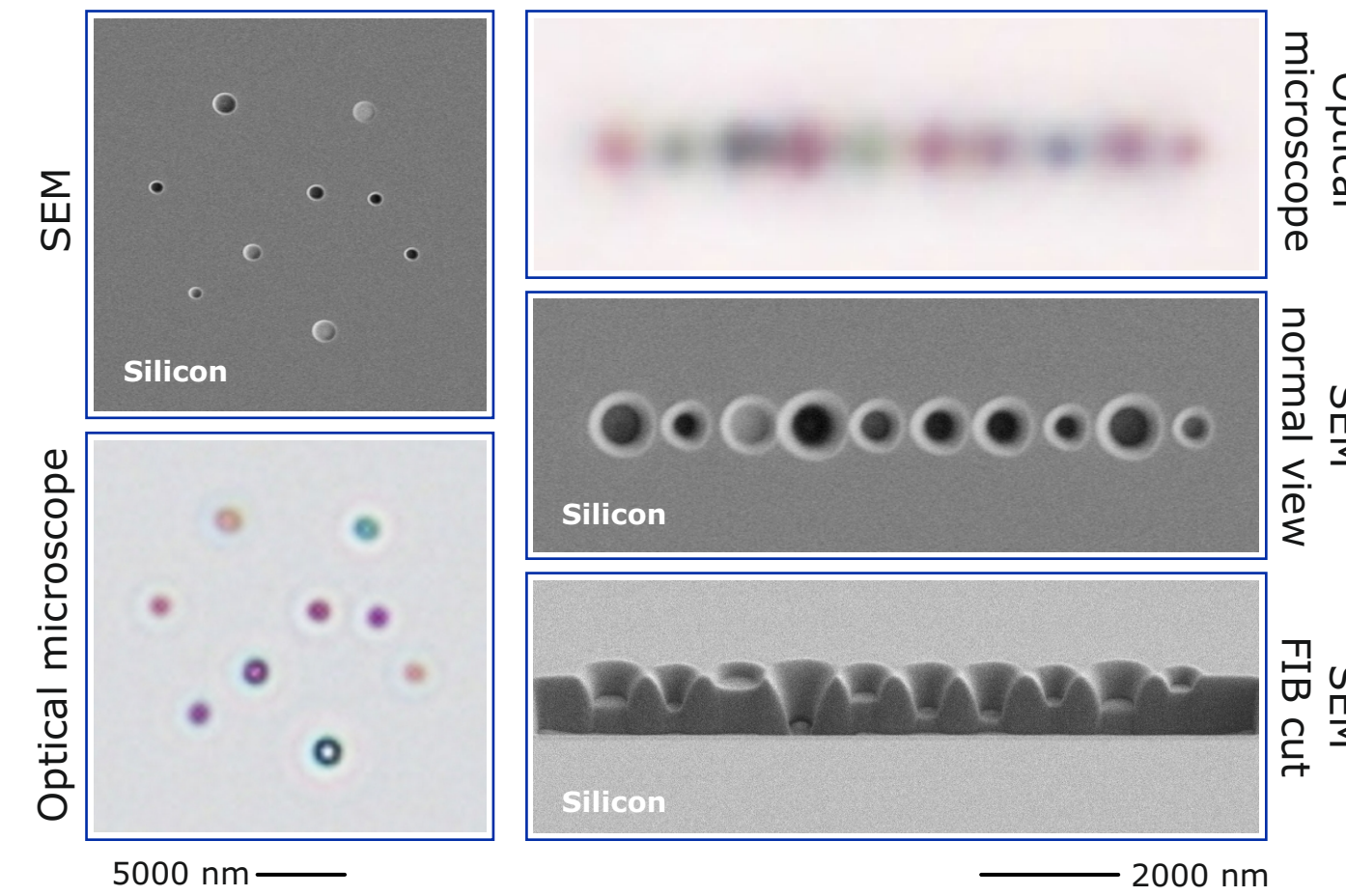


#### Related Team:

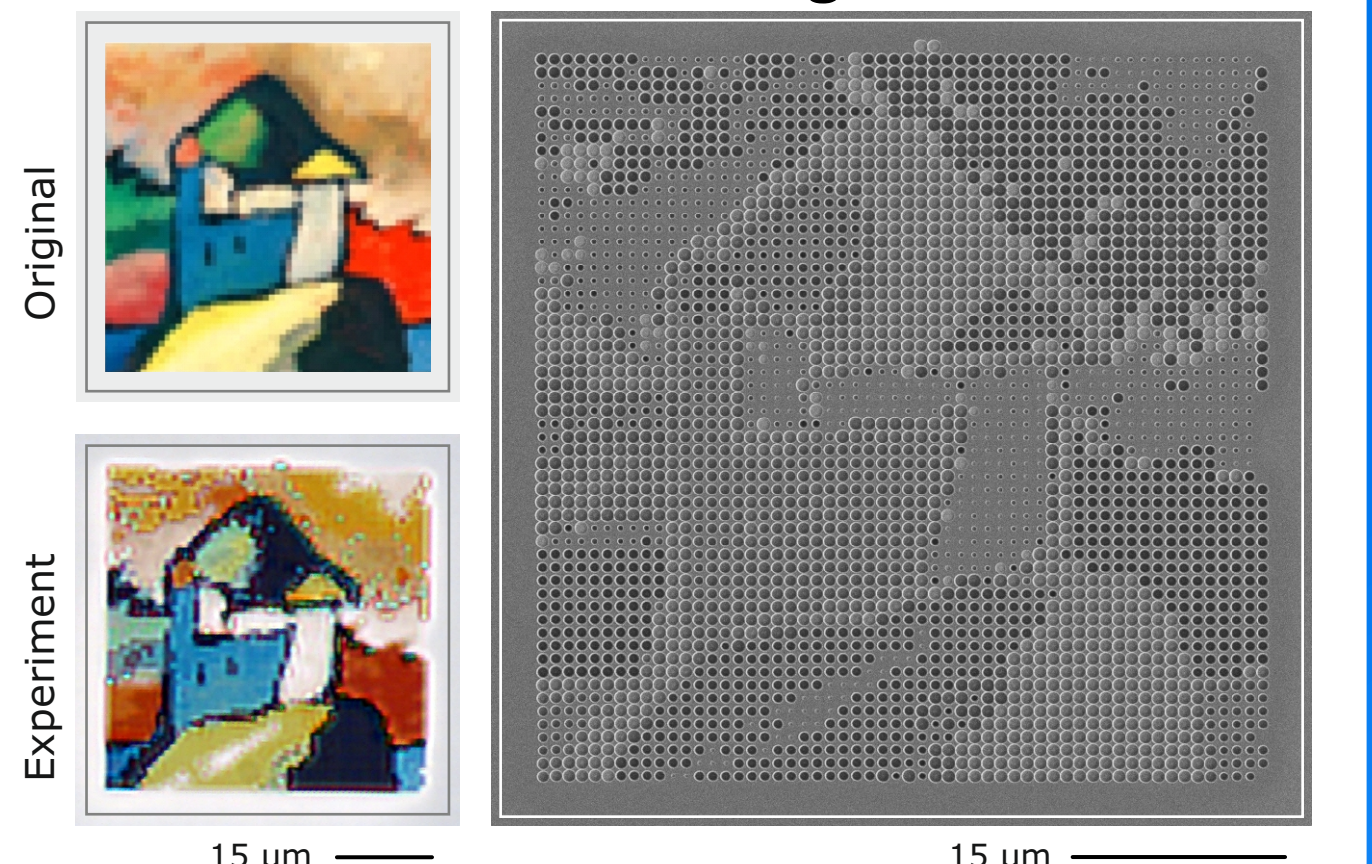
- Philipp Karl
- Pavel Ruchka
- Sandra Mennle
- Sara Jakovljevic

## MIE VOIDS

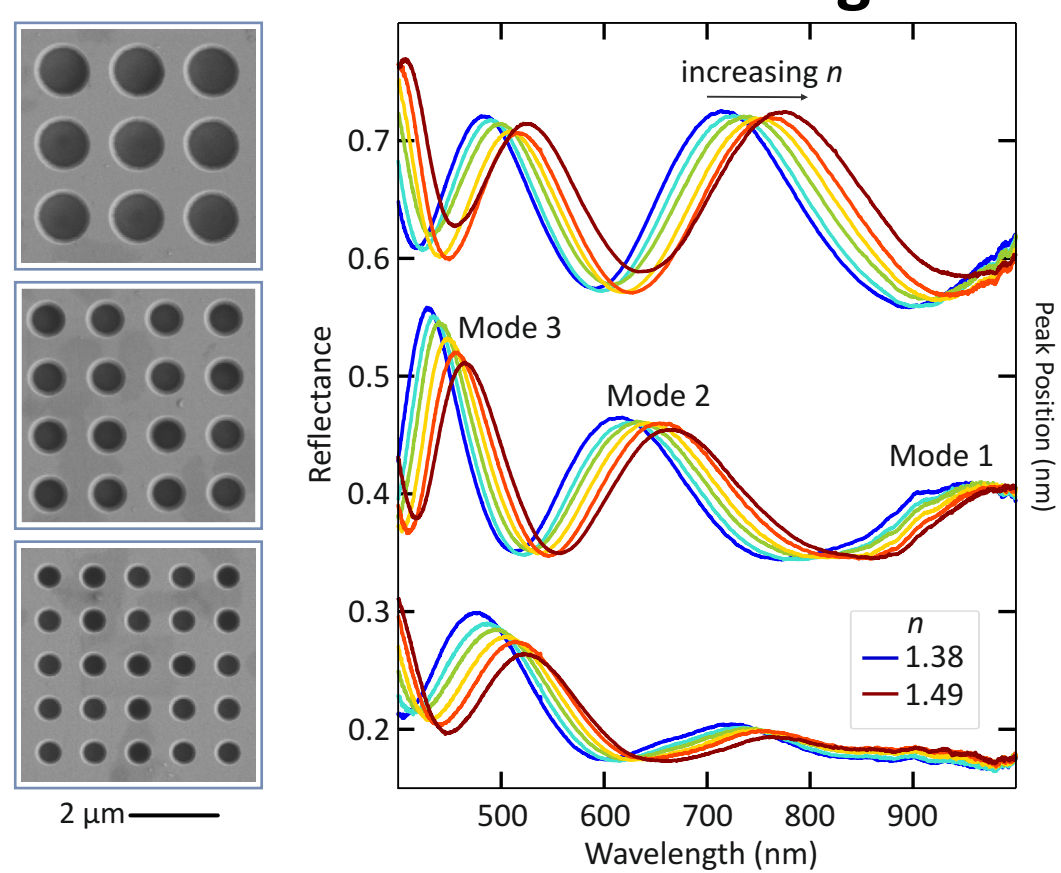
### Voids in Silicon



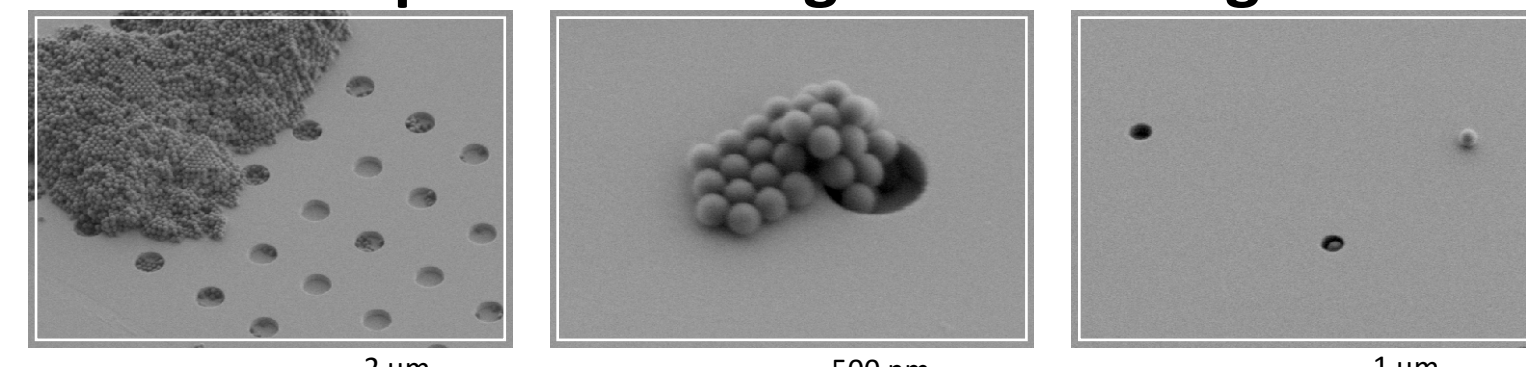
### Color Printing



### Refractive Index Sensing



### Nanoplastic Sensing and Counting



#### Related Team:

- Mario Hentschel
- Dominik Ludescher
- Benjamin Reichelt
- Luca Schmid
- Serkan Arslan
- Michelle Pfahl