# My start in Photonics

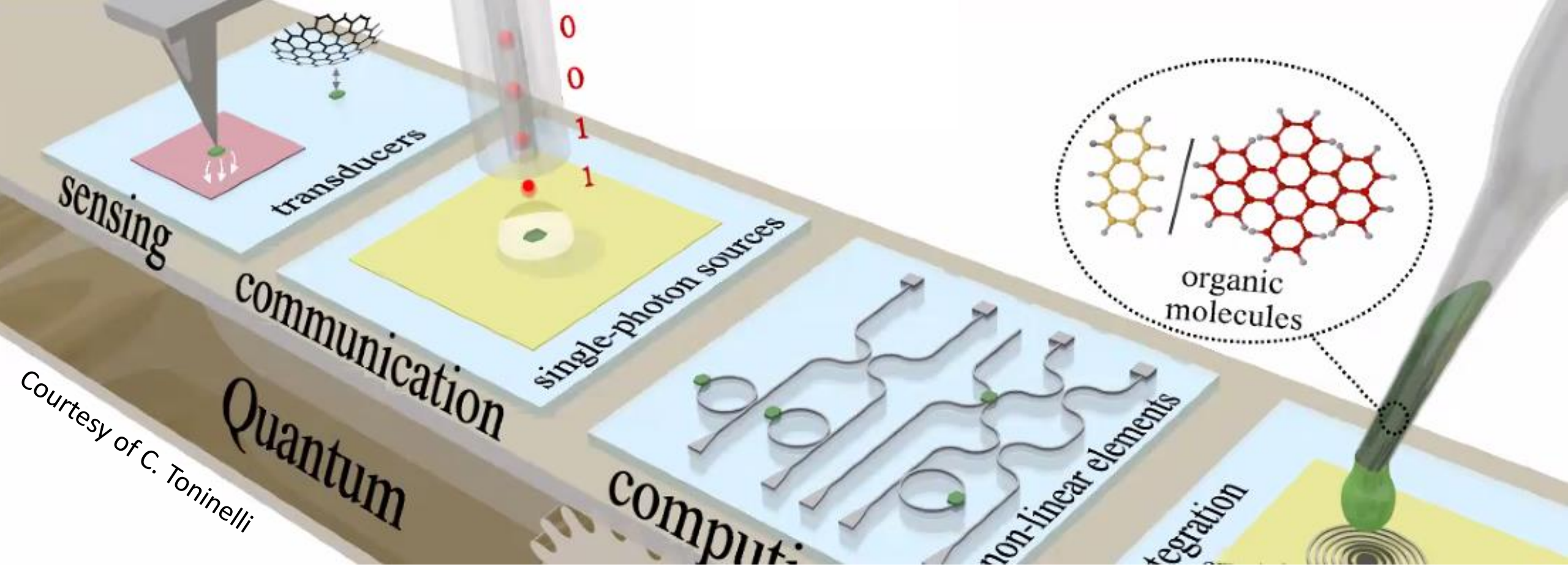
Florence → Vienna → Berlin






Sofia Pazzagli

Working in Photonics in Berlin – 28 June 2022



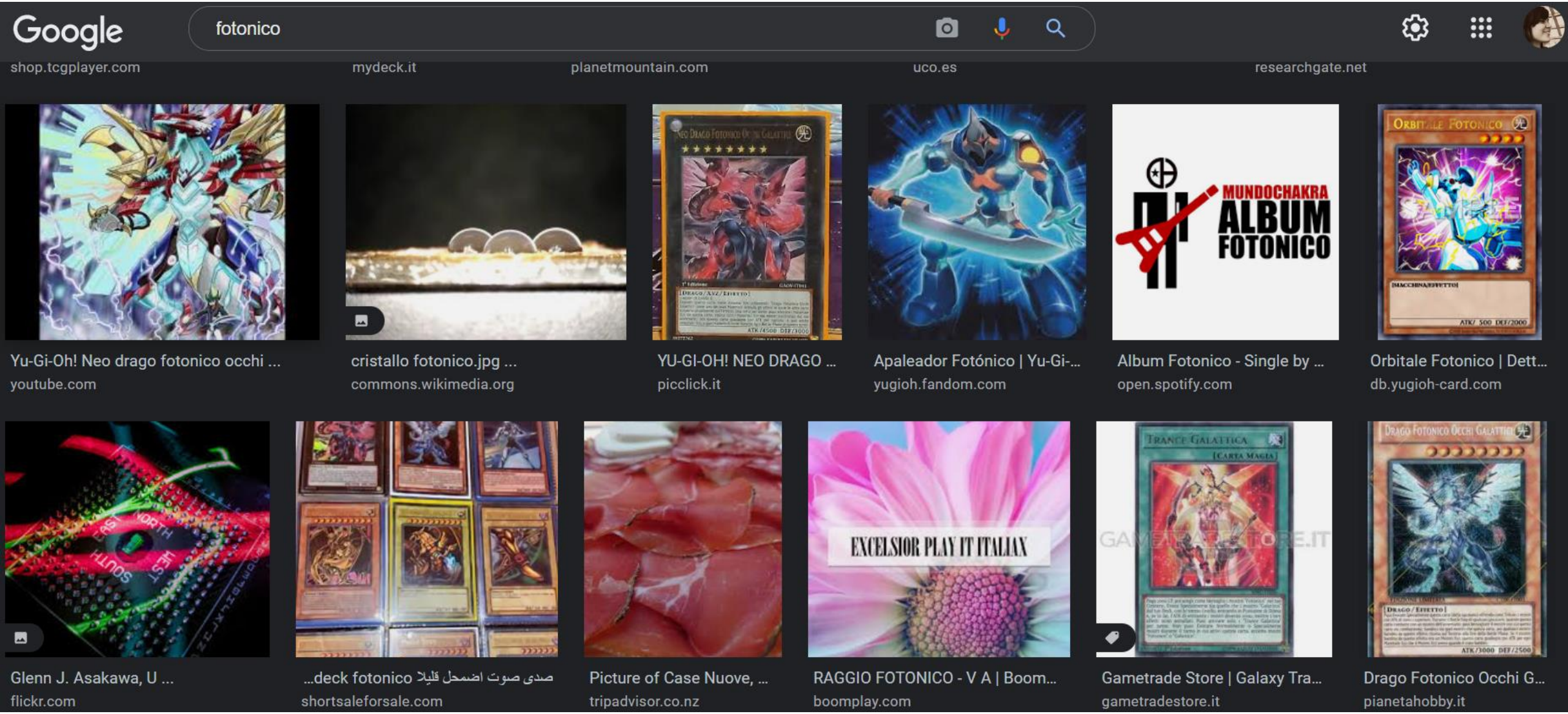

Courtesy of C. Toninelli

- use organic molecules as sources of [single] photons

- find photonic interfaces (= material + geometry) to [efficiently] collect and control the emitted light

- develop organic-based photonic [quantum] technologies

# My start: [ITA] fotonico = [ENG] something cool




(nerd) playing cards – 58%

Music – 17%

Looks like science – **17%**

Ham (!!!) – 8%

# My start:


role models & curiosity-triggers

**Pr Massimo Gurioli**
Chair of Photonics

**Dr Costanza Toninelli**
Group Leader of
Integrated Quantum
Photonics

Florence → Vienna → Berlin

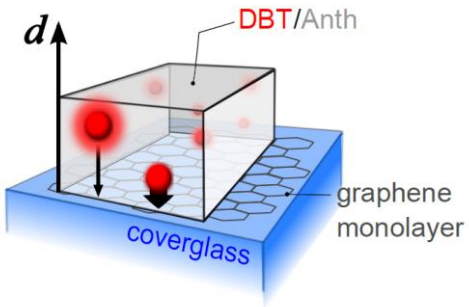
2014
MSc Physics

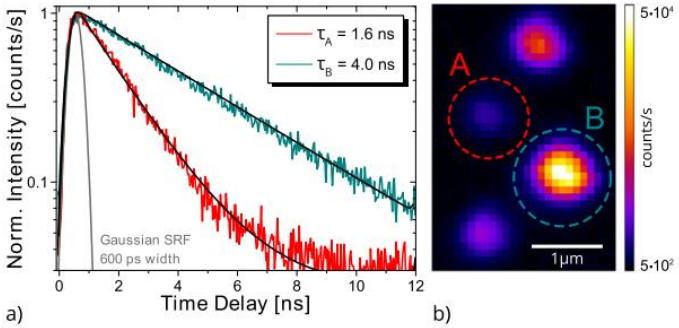
First paper!

New Journal of Physics
The open access journal at the forefront of physics
Deutsche Physikalische Gesellschaft DPG | IOP Institute of Physics

# Single-molecule study for a graphene-based nano-position sensor

G Mazzamuto[1,2,6], A Tabani[1,6], S Pazzagli[2], S Rizvi[1], A Reserbat-Plantey[5], K Schädler[5], G Navickaite[5], L Gaudreau[5], F S Cataliotti[1,2,3], F Koppens[5] and C Toninelli[1,3,4]



Florence → Vienna → Berlin

PhD: 2014-2018

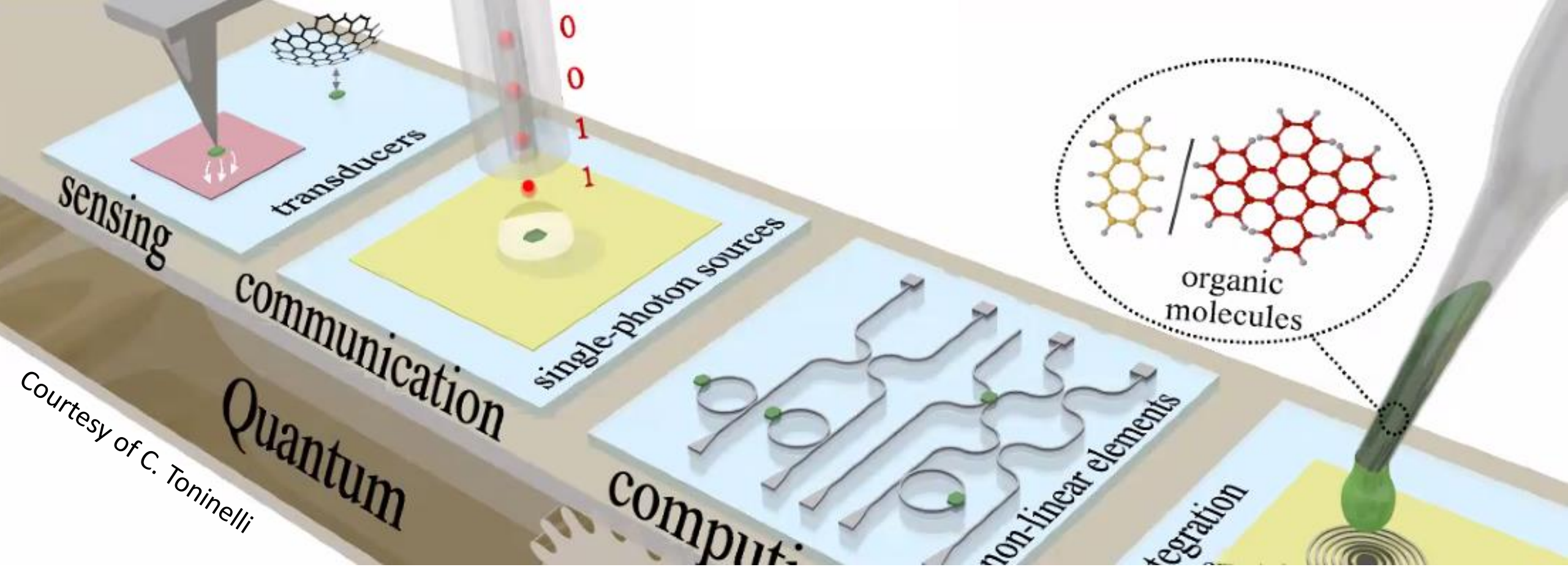
## international collaboration

**Pr Arno Rauschenbeutel**
Chair of Quantum Optics

## conferences, summer schools



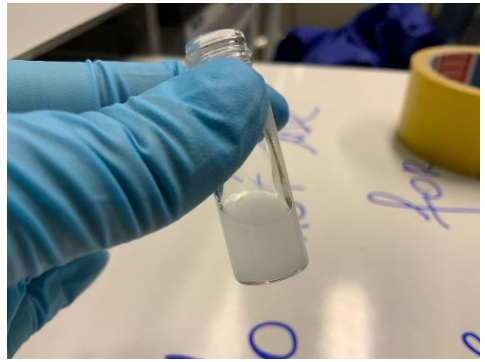
CEWQO'17

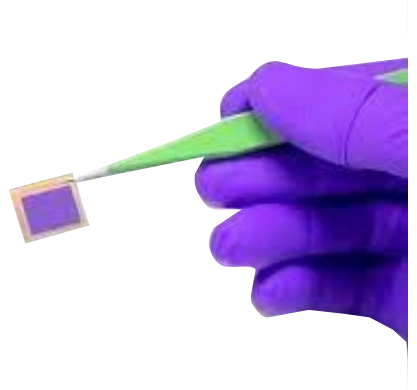



Courtesy of C. Toninelli

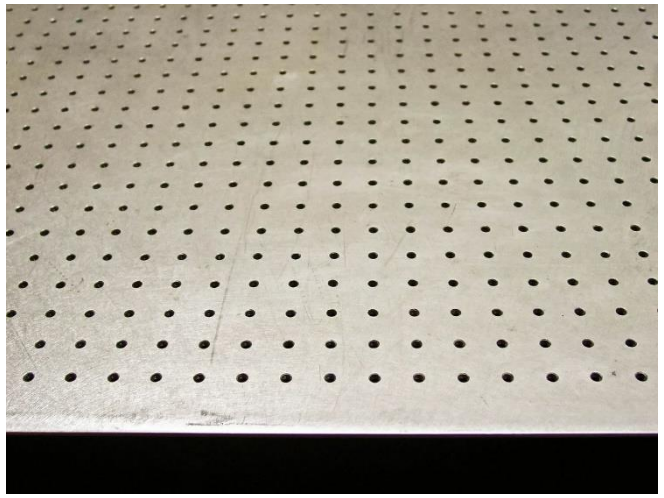
- use organic molecules as sources of [single] photons

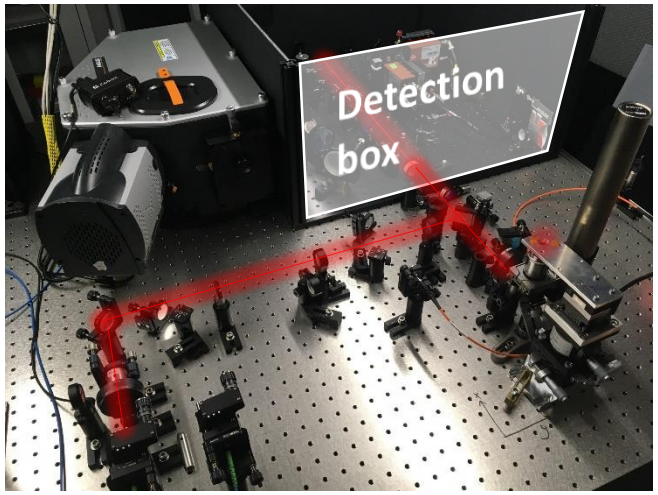
# Synthesis of organic nanoparticle as single-photon sources

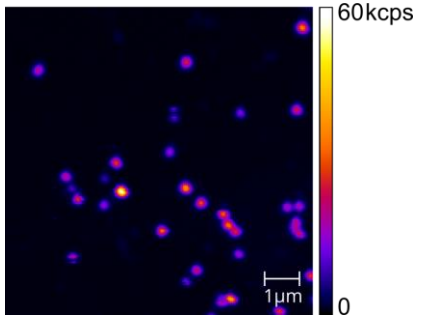


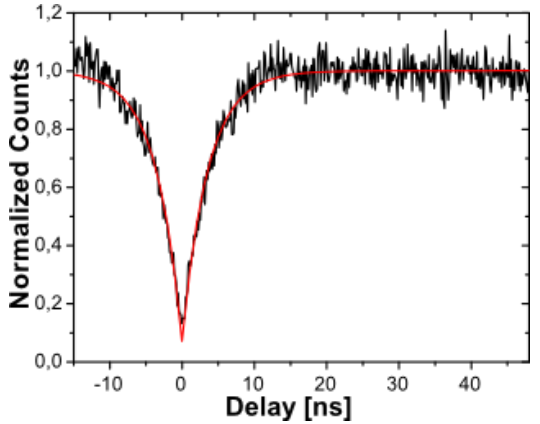


# Optical setup for optical characterization

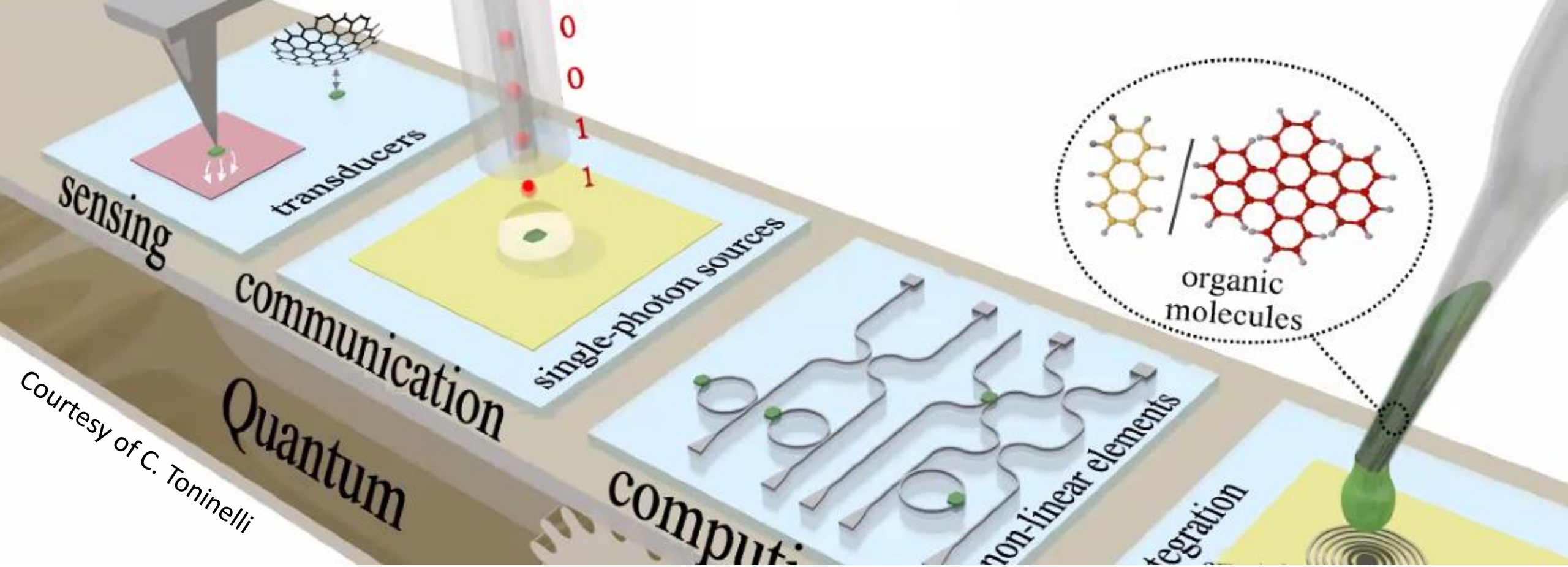





+ JointLab (Dr Katja Höflich)
+ BSc project (Lukas Jehna)




Courtesy of C. Toninelli

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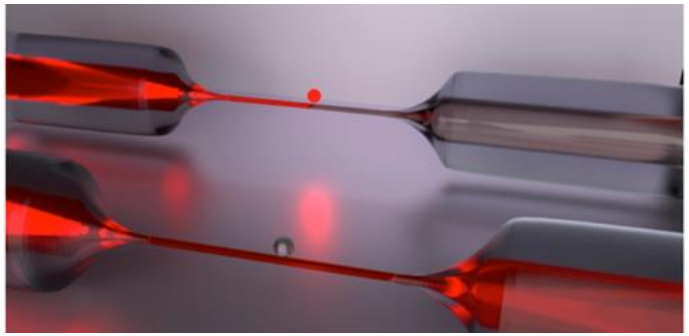
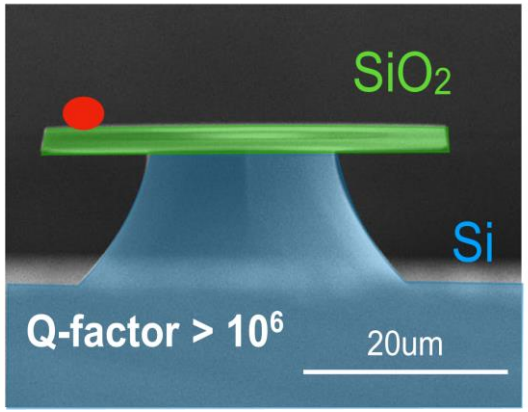
## Tapered optical fiber

Fabricated in our Lab – Thomas Hoinkes



## Microdisk resonators



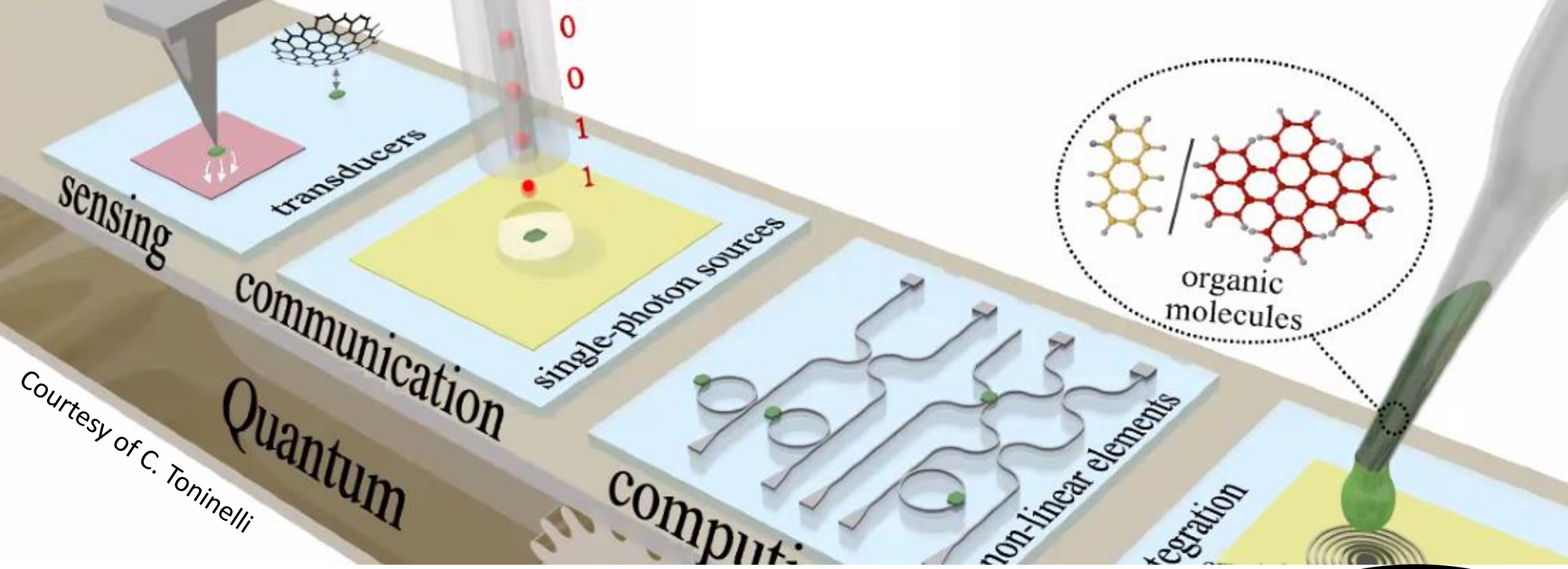

Leibniz Ferdinand Braun Institut

## Characterization setup

(MSc project – Wanrong Li)

## Microinjection setup

(BSc project – Lewin Kräuter)




Courtesy of C. Toninelli

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My fairy question

**Institute of Physics**
Humboldt Universität zu Berlin

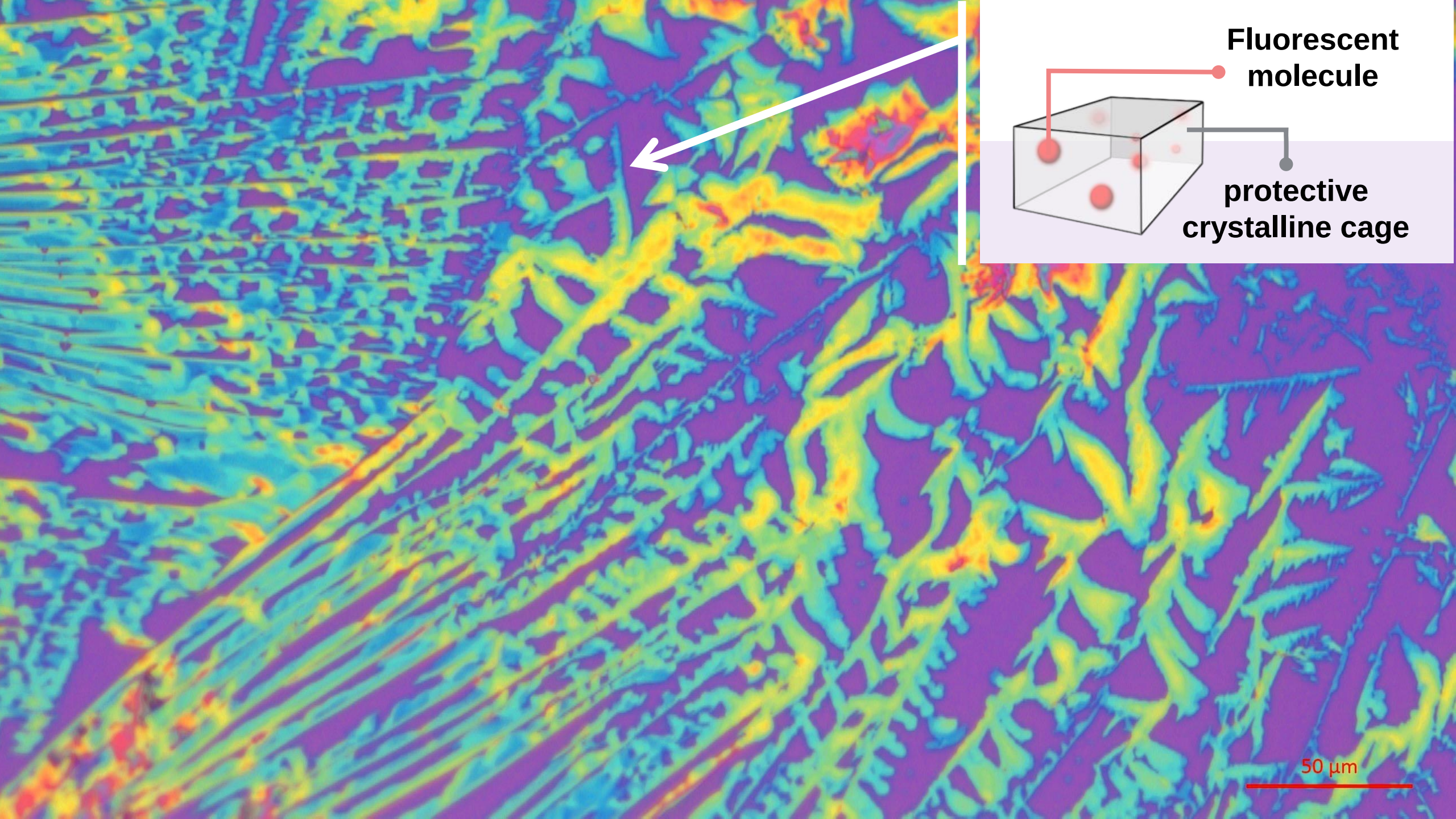
AG GOP – Pr Rauschenbeutel

Thank you!
Questions?

**We are here!**

sofia.pazzagli@hu-berlin.de

@SofiaPazzagli


Fluorescent molecule
protective crystalline cage
50 µm