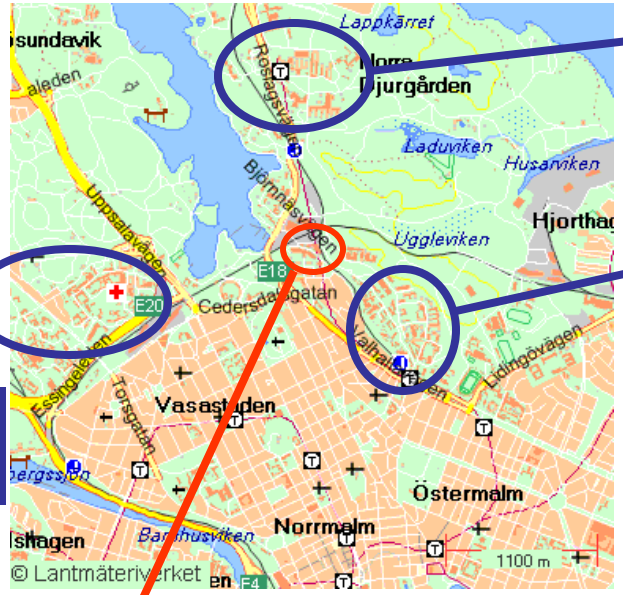


Stockholm University

KTH main campus

Karolinska Institutet

Albanova University Center

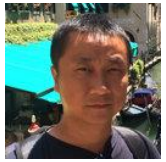
Experimental Biomolecular Physics, KTH

11 researchers
1 professor
3 senior researchers
3 postdocs
4 PhD students

Present members:

Niusha Bagheri
(PhD stud)

Baris Demirbay
(PhD stud)



Zhixue Du
(postdoc)

Uliana Kostiv
(postdoc)

Luciá Labrador Paéz
(postdoc)

Haichun Liu
(senior researcher)

Joachim Piguet
(senior researcher)

Elin Sandberg
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Per Thyberg
(senior researcher)

Chinmaya Venugopal Srambickal
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Jerker Widengren
(professor)

Present members:

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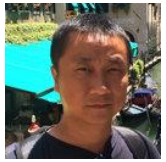

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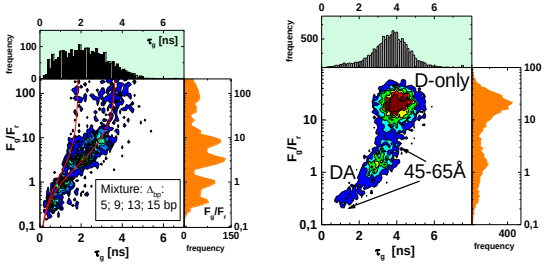
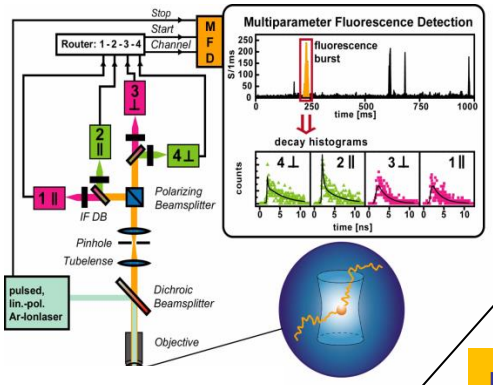
Experimental Biomolecular Physics, KTH

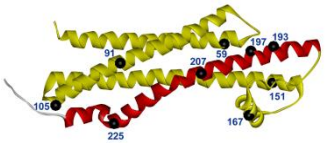
Applied Physics

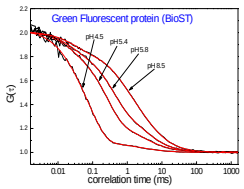
Ultrasensitive / ultrahigh resolution fluorescence spectroscopy / imaging:
Method development & applications (biomolecular research, diagnostics)

Single molecule spectroscopy

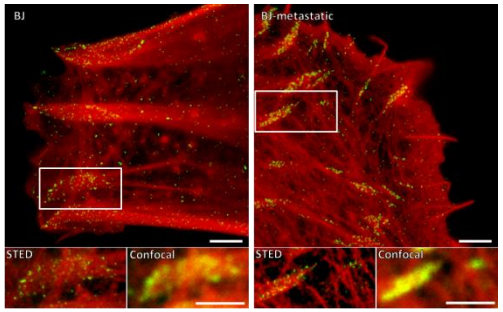


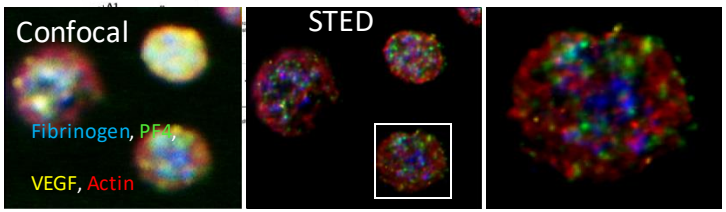




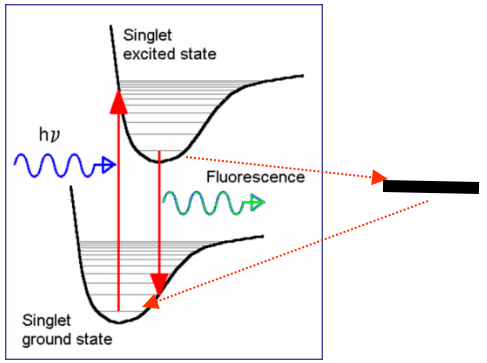


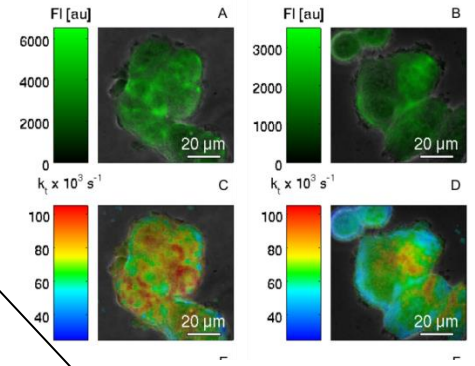
STED microscopy



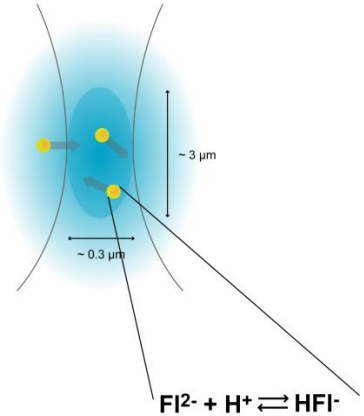


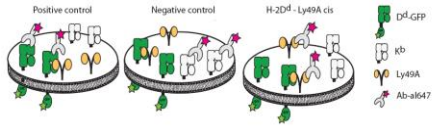
TRAST microscopy

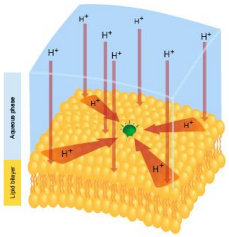




Fluorescence Correlation Spectroscopy



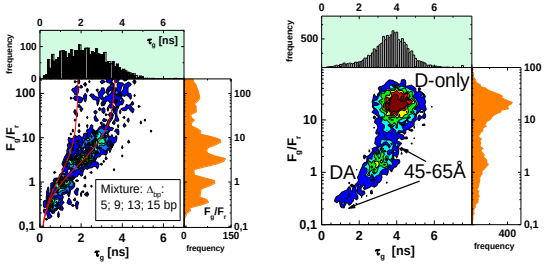


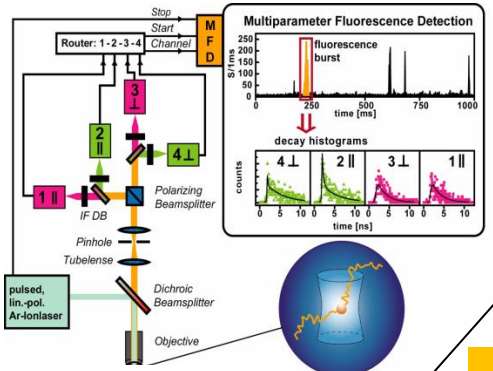


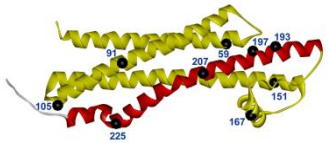
Experimental Biomolecular Physics, KTH

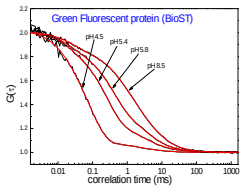
Applied Physics

Single molecule spectroscopy





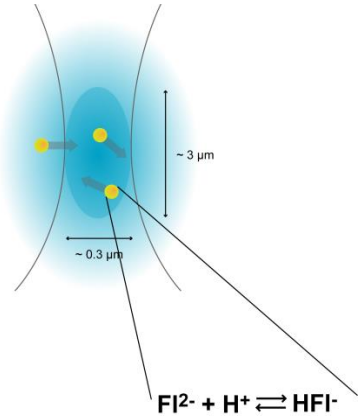


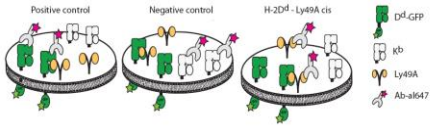


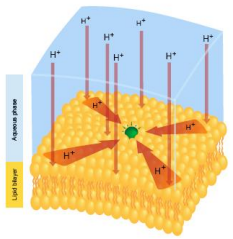
Limitations:

- Blinking
- Photophysics of dyes

Fluorescence Correlation Spectroscopy



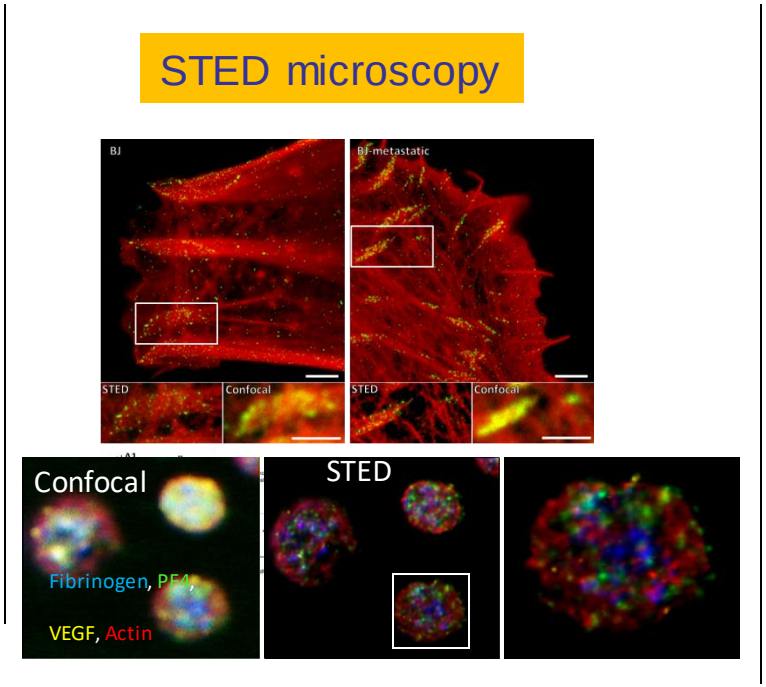




Experimental Biomolecular Physics, KTH

Applied Physics

STED microscopy

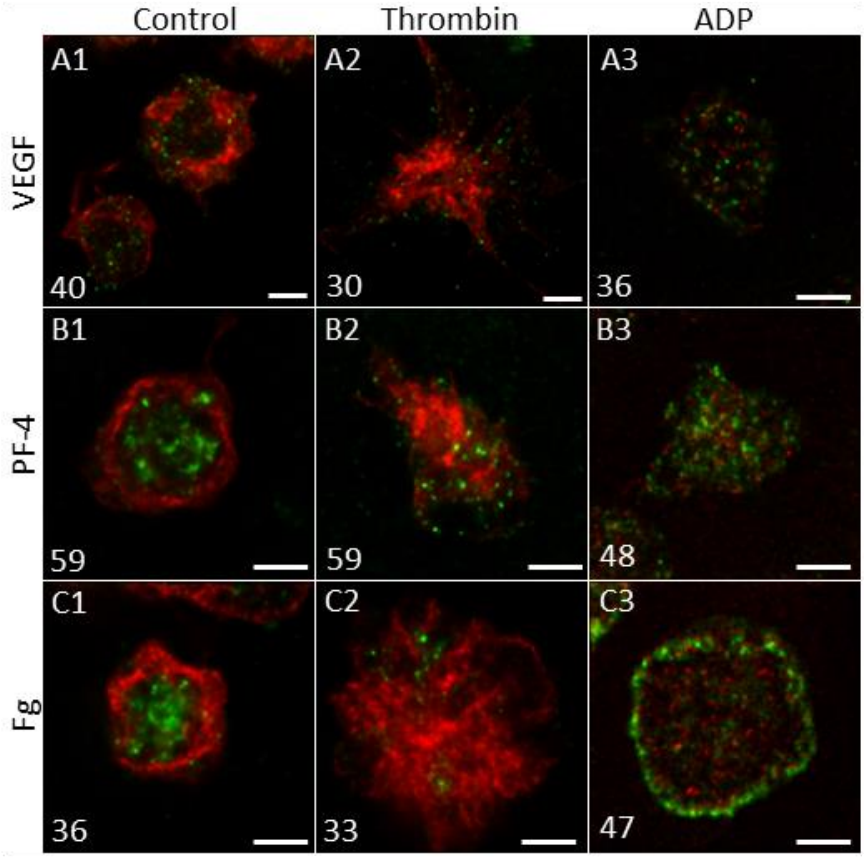


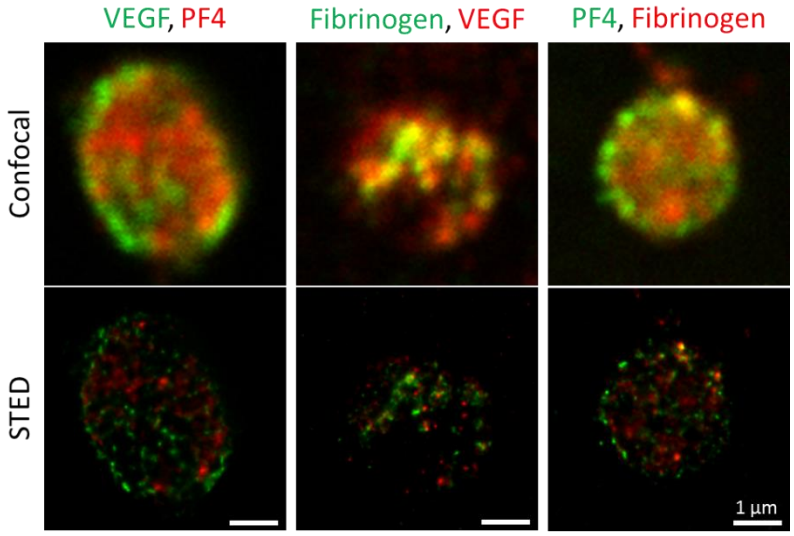
SPOTLITE → FLUODIAMON → Spin-off research

2005-2007 2008-2011 2011-

Platelet studies:

(collab. Gert Auer, Karolinska inst)

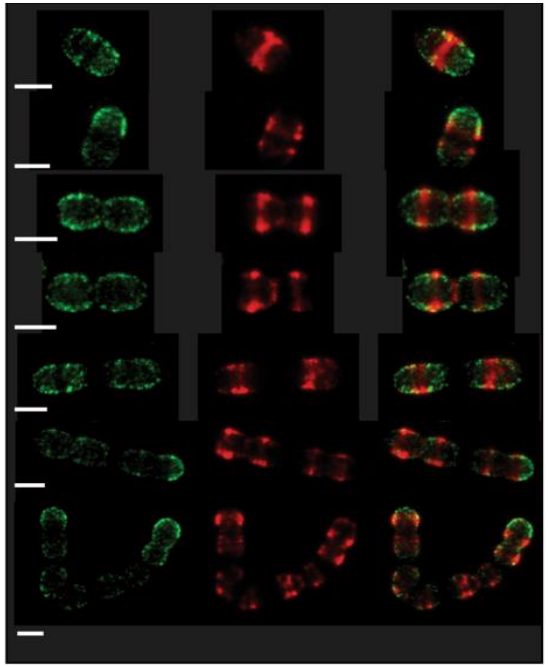


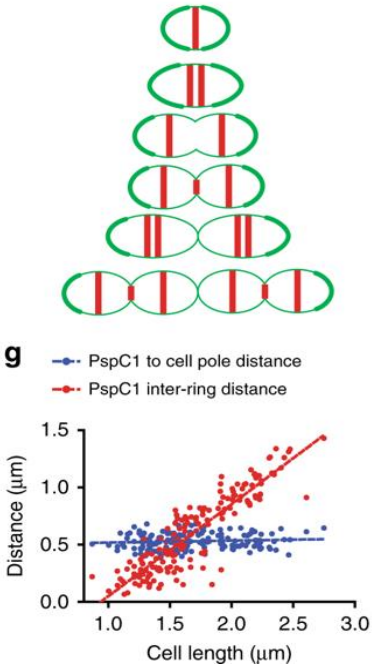


Rönnlund *et al, Adv Healthcare Mater. 1(6), 707-713, 2012*

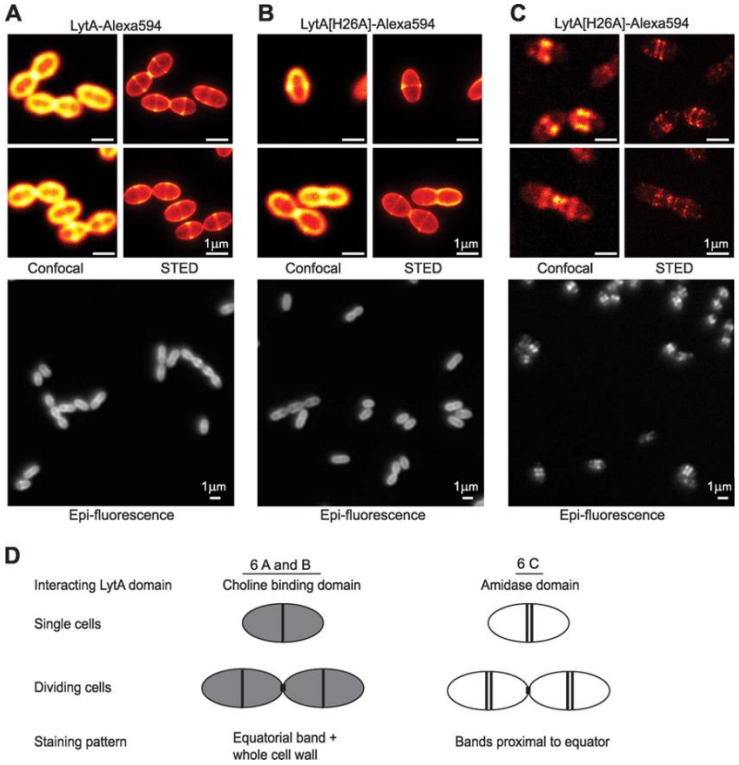
Pneumococci

Collab. Birgitta Henriques-Normark, KI





Pathak *et al, Nat Comm,* 2017



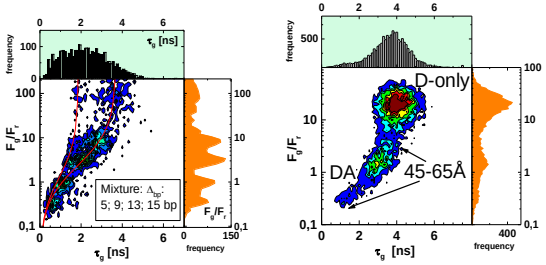
P Mellroth *et al, J Biol Chem*, 2012

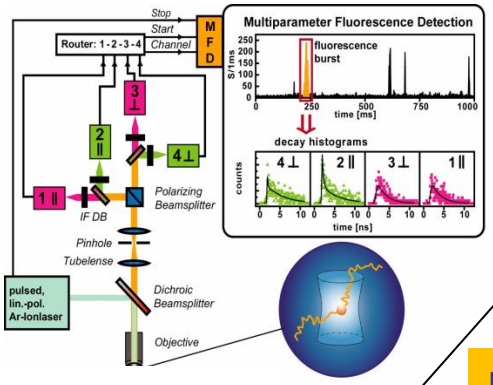
Experimental Biomolecular Physics, KTH

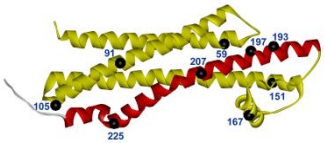
Applied Physics

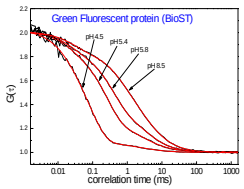
Ultrasensitive / ultrahigh resolution fluorescence spectroscopy / imaging:
Method development & applications (biomolecular research, diagnostics)

Single molecule spectroscopy

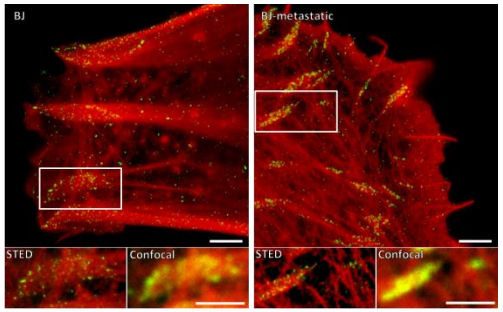


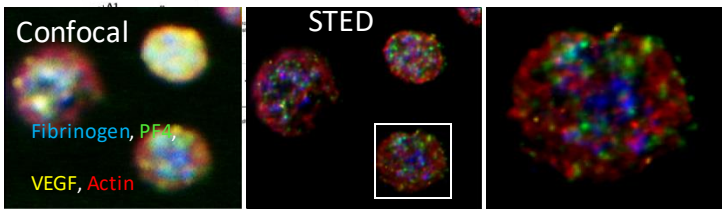




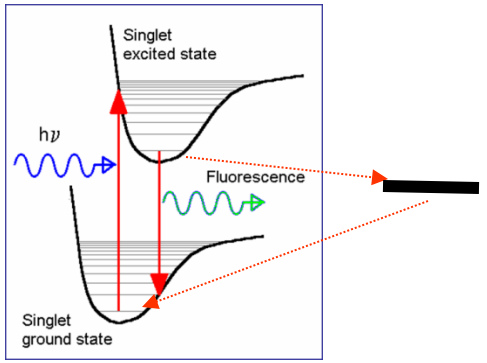


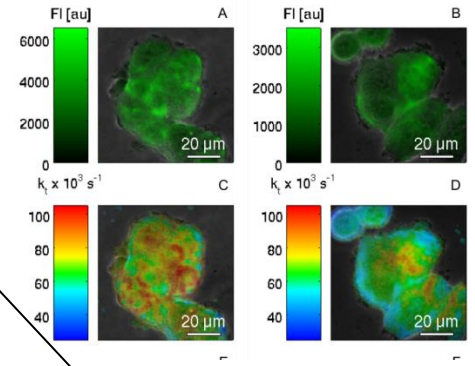
STED microscopy



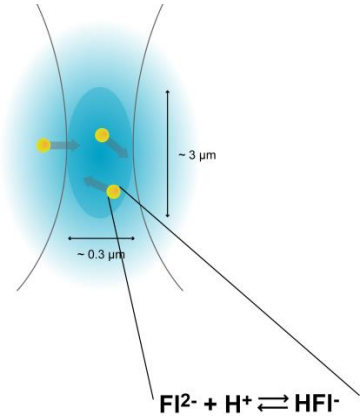


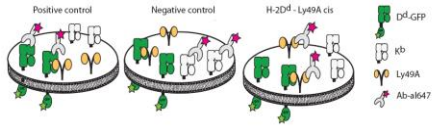
TRAST microscopy

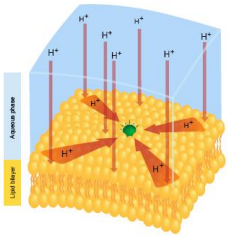




Fluorescence Correlation Spectroscopy



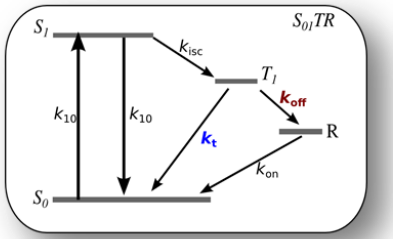


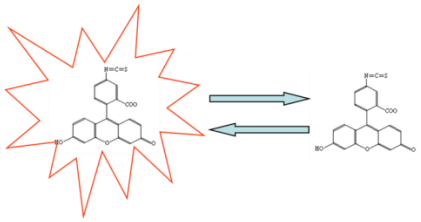


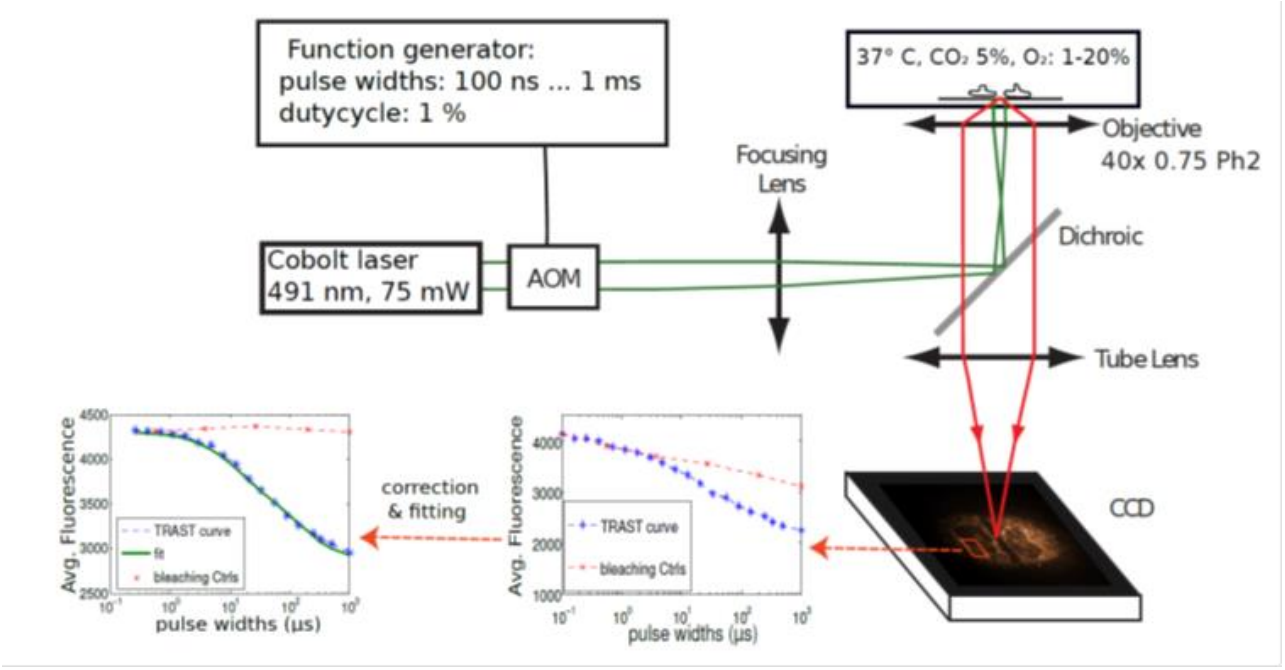
Experimental Biomolecular Physics, KTH

Applied Physics

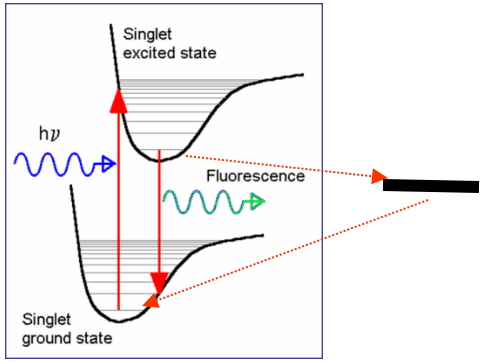
Blinking/switching: source of information

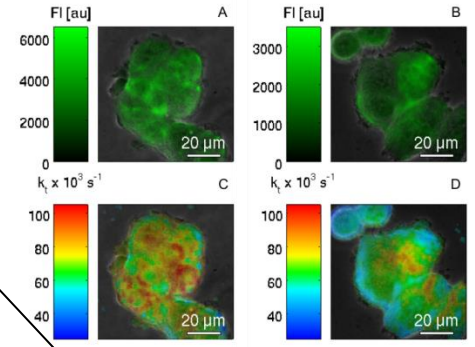






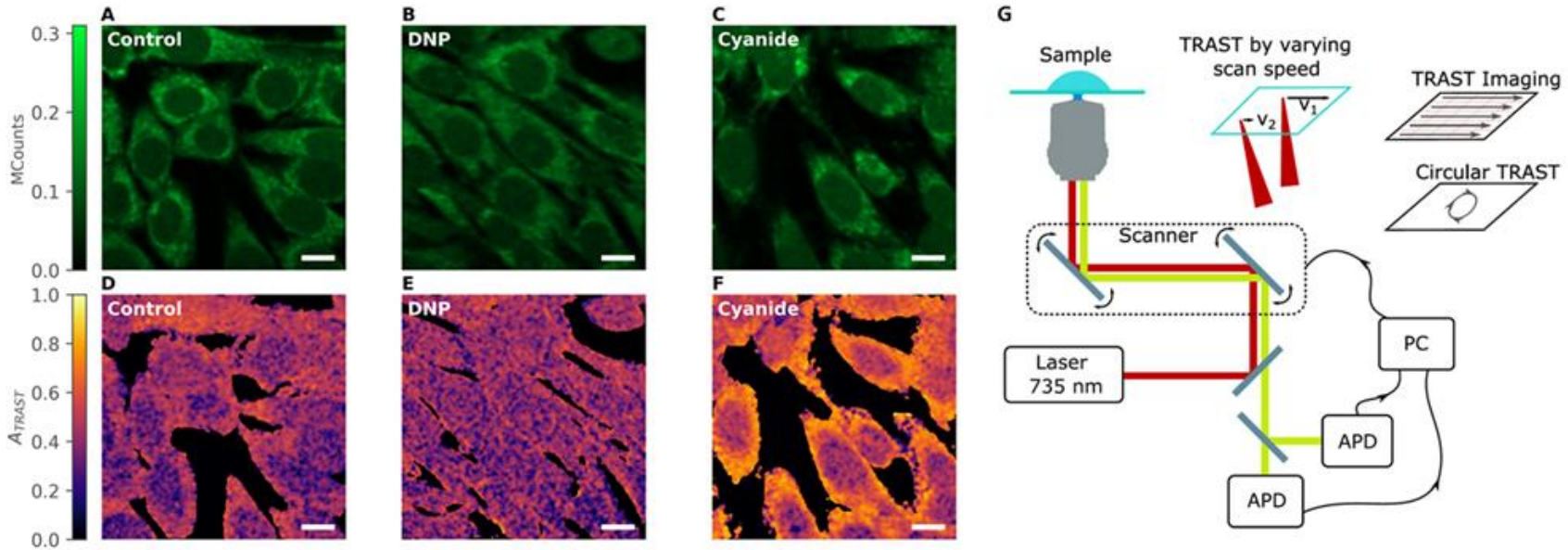
TRAST microscopy





NanoVIB:

- Additional imaging parameter(s)
- FCS/TRAST for fluorophore characterization



Tornmalm *et al, Sci. Rep.* 2019

MMs of KTH:

WP1: 4

WP2: 14

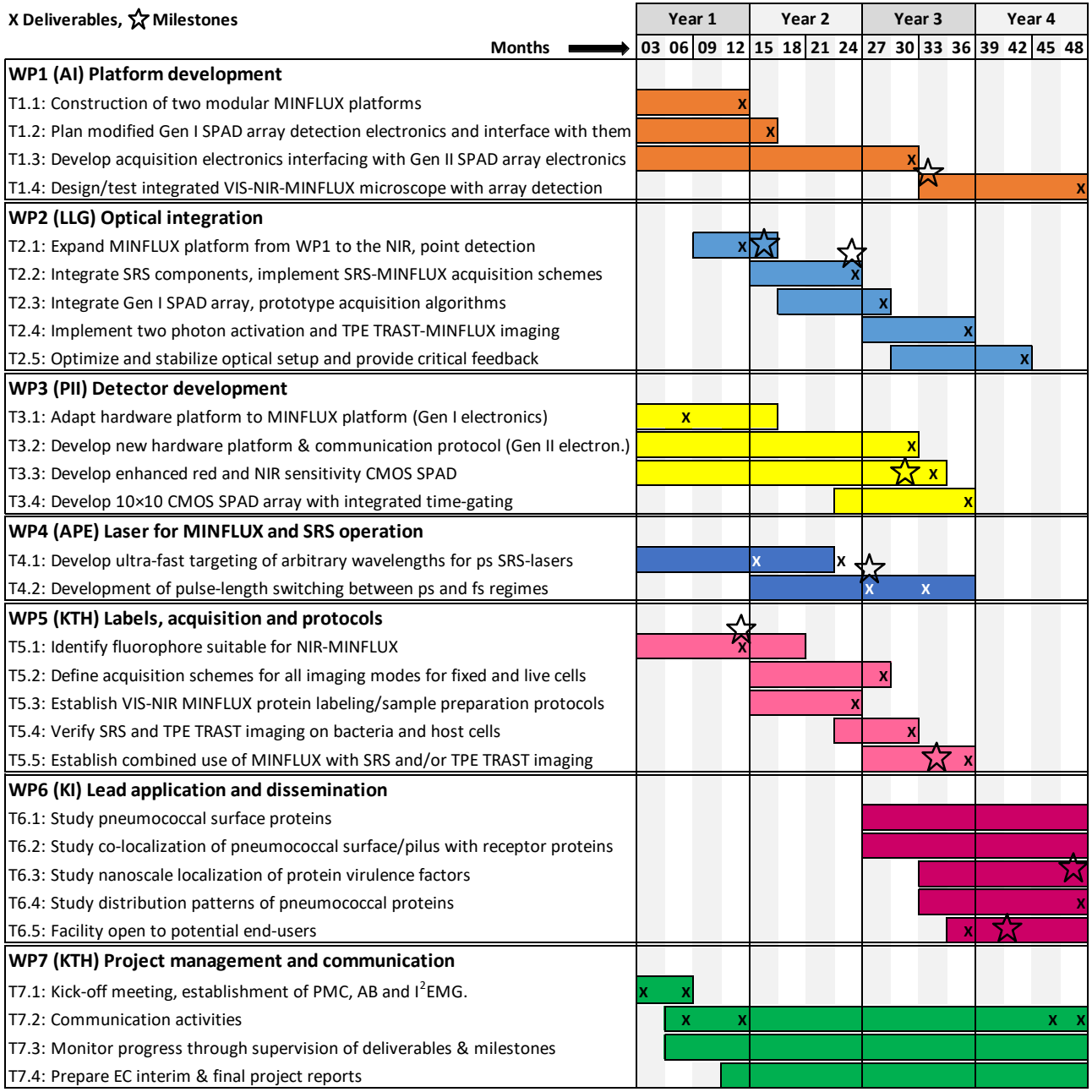
WP3: 1

WP4: 1

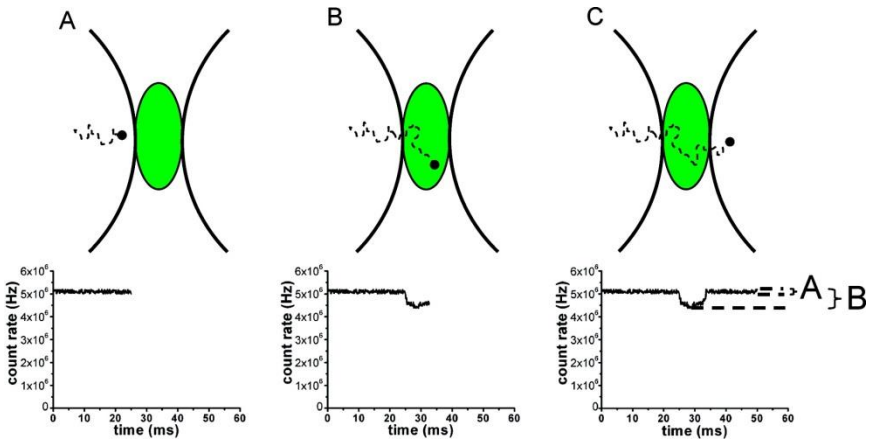
WP5: 72

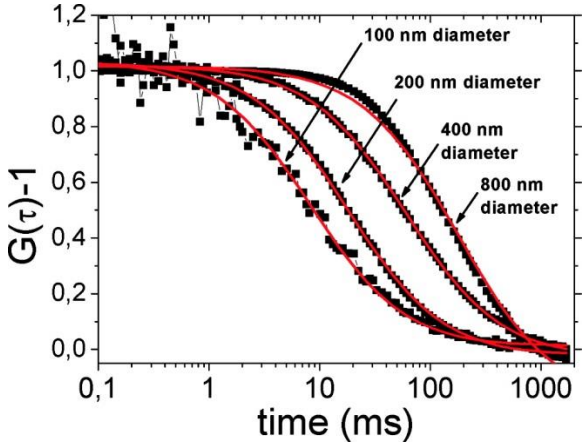
WP6: 16

WP7: 20

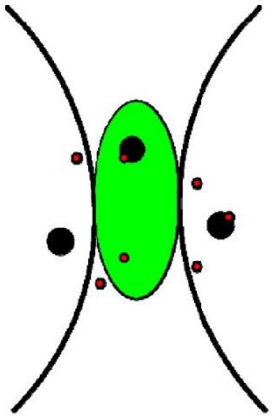


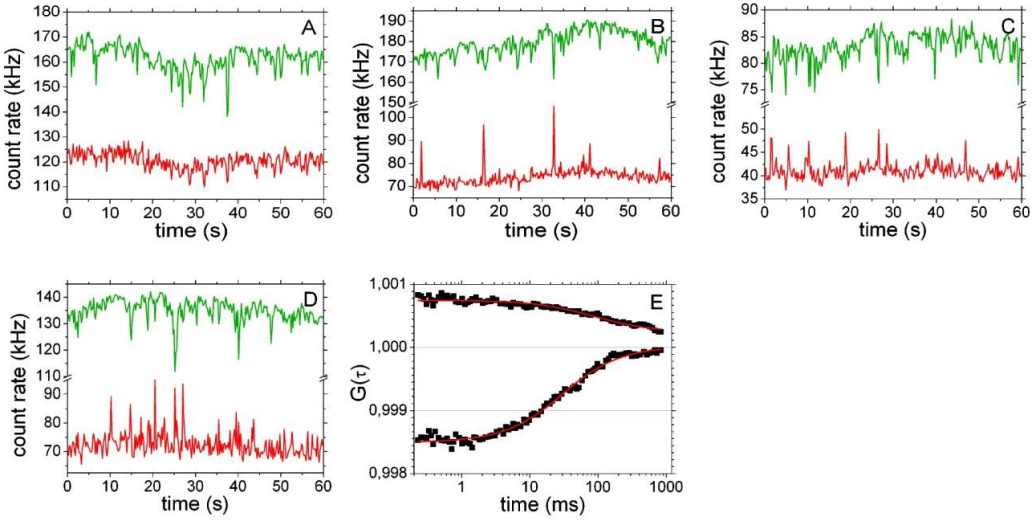
inverse-FCS





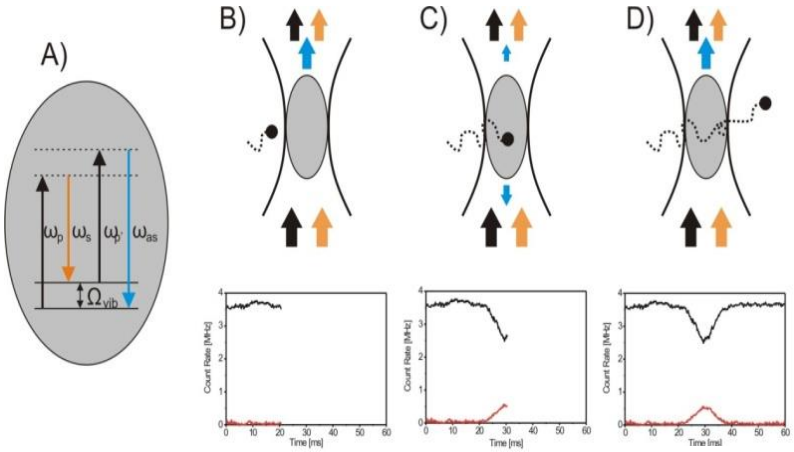
inverse-FCCS

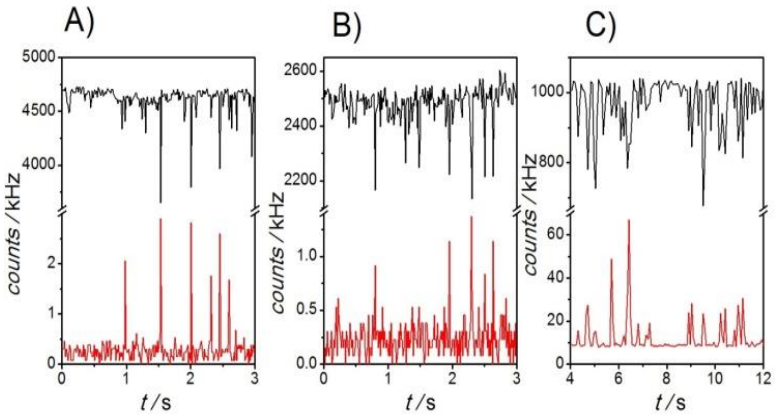


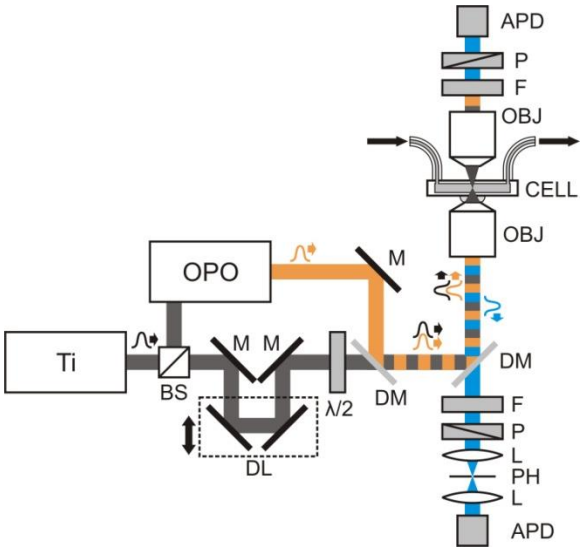


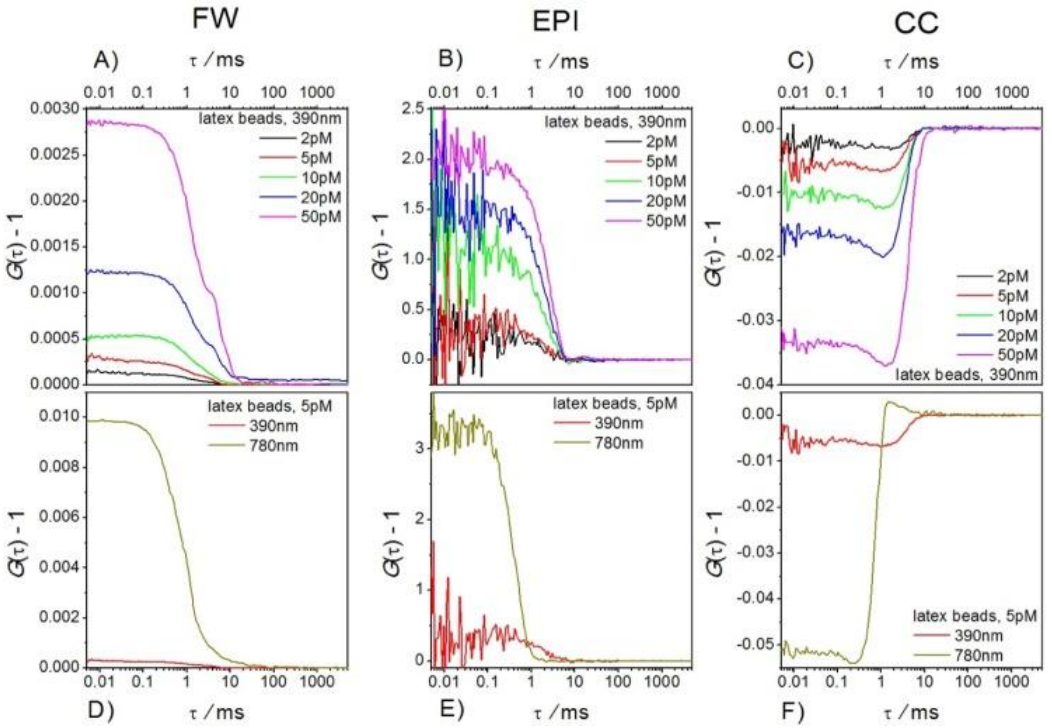
Wennmalm S *et al*, *Anal. Chem.* 81(22), 9209-9215, 2009
Wennmalm S and Widengren J, *Anal. Chem.* 82(13), 5646-5651, 2010
Wennmalm S and Widengren J, *Frontiers in Bioscience (2011)*

Inverse CARS-based Correlation Spectroscopy (iCARS-CS)









Rabasovic *et al*, *ChemPhysChem* 2016