

## Curriculum Vitae – Andreas Dahlin



**Full name:** Andreas Bo Oscar Dahlin

**Title:** Professor

**Position:** Professor in applied surface science and group leader.

**Birthdate:** 7<sup>th</sup> November 1980 (Karlstad)

**Nationality:** Swedish

**Marital status:** Married, two children.

**Affiliation:** Div. of Applied Chemistry, Dept. of Chemistry and Chemical Engineering, Chalmers University of Technology

**Address:** Kemigården 4, 41296 Göteborg, Sweden

**E-mail:** [adahlin@chalmers.se](mailto:adahlin@chalmers.se)

**Web:** <http://www.adahlin.com/>

### Previous Employment

ResearchGate

Google scholar

**Assistant Professor @ Dept. of Physics**, Chalmers University of Technology, Göteborg, Sweden. (March 2012 – October 2016)

**Postdoc @ Div. of Bionanophotonics**, Dept. of Applied Physics, Chalmers University of Technology, Göteborg, Sweden.

Group leader: Prof. **Mikael Käll** (August 2011 – February 2012)

**Postdoc @ Laboratory of Biosensors and Bioelectronics**, Inst. for Biomedical Engineering, Swiss Federal Institute of Technology, Zürich, Switzerland.

Group leader: Prof. **Janos Vörös** (August 2009 – July 2011)

**PhD Student @ Div. of Biological Physics**, Dept. of Applied Physics, Chalmers University of Technology, Göteborg, Sweden.

Group leader: Prof. **Fredrik Höök** (October 2007 – July 2009)

**PhD Student @ Div. of Solid State Physics**, Dept. of Physics, Lund University, Lund, Sweden.

Group leader: Prof. **Lars Samuelsson** (September 2004 – September 2007)

**PhD Student @ Div. of Chemical Physics**, Dept. of Applied Physics, Chalmers University of Technology, Göteborg, Sweden.

Group leader: Prof. **Bengt Kasemo** (February 2004 – August 2004)

### Career Breaks

I was on parental leave for a total of slightly more than **16 months** during 2008-2020.

### Academic Degrees

**Professor** – Applied Surface Science, Chalmers University of Technology, Sweden (2021).

**Associate Professor** - Physics, Chalmers University of Technology, Sweden (2015).

**Doctor of Philosophy** - Bioscience with Engineering Physics, Chalmers University of Technology, Sweden (2008).

**Licentiate of Science** - Physics, Lund University, Sweden (2006).

**Master of Science** - Bioengineering, Chalmers University of Technology, Sweden (2004).

CHALMERS



ETH

Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich



LUND  
UNIVERSITY

## Quantitative Merits

- 67 research papers.
- 9 review papers.
- 4 book chapters.
- 1 sole author book.
- 8 graduated PhDs (main supervisor).
- 24 conference talks.
- 16 poster contributions.
- Reviewer for 71 scientific journals.
- Reviewer for 12 research funding agencies.
- Principal investigator for 10 externally funded research grants.
- Co-applicant for 2 externally funded research projects.

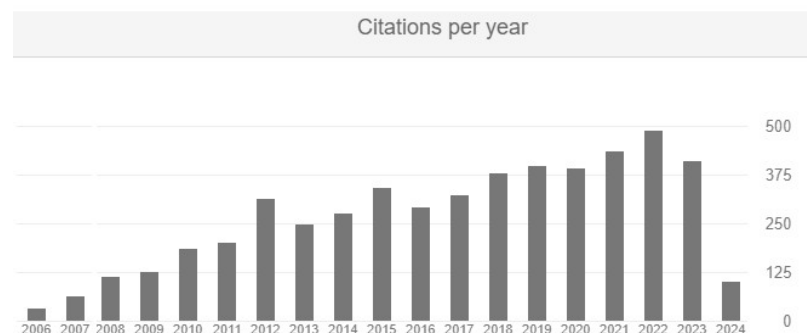
## Awards (selection)

- Founder of company on the *Ny Teknik* 33-list of best tech startups in Sweden (2023).
- Selected for the *Royal Swedish Academy of Engineering Sciences* top 100 inventions (2023).
- *ERC Consolidator Grant* (2020).
- Swedish Foundation for Strategic Research *Framework Grant* "Materials for Energy" (2018).
- *Swedish Foundations Starting Grant* 2017 (for receiving rating "A" on ERC StG application).
- Winner of *Science Slam* (popular science talk competition) in the European finals (Brno 2017).
- One of the "100 coolest researchers" in Sweden (list made at the Science Festival 2017).
- Appointed *Wallenberg Academy Fellow* by the Royal Academy of Sciences (2015).
- Swedish Research Council *Young Researcher Project Grant* (2012).
- EU FP7 People Marie Curie *Career Integration Grant* (2012).
- Swedish Foundation for Strategic Research *Ingvar Carlsson Award* (2011).
- Swedish Research Council Postdoctoral Scholarship (2009).



## Citation Metrics

**Source: Google Scholar**  
**Entries with citation data: 81**  
**Total number of citations: 5176**  
**h-index: 39**  
**i10-index: 65**



## Supervision

Student	Degree	Title of thesis	My role	Year
Oliver Olsson	PhD	Electronic paper in color by electrochromic materials and plasmonics	Main supervisor	2023
Leya Backerman	Master	A synthetic mimic of the nuclear pore complex	Supervisor, Examiner	2023
John Andersson	PhD	Functional polymer brush coatings for nanoscale devices	Main supervisor	2022
Justas Svirelis	PhD	Biomolecule trapping with stimuli-responsive polymer coated nanostructures	Main supervisor	2022
Marika Gugole	PhD	Electrochromic nanostructures based on tungsten trioxide for reflective displays	Main supervisor	2022
Bitia Malekian	PhD	Novel functionalized nanopores for plasmonic sensing	Main supervisor	2021
Asaad Umair	Master	Simulations and experimental study of pressure-driven volumetric flow across plasmonic nanopores	Main supervisor	2021
Gustav Ferrand-Drake del Castillo	PhD	Polyelectrolyte brush electrodes for protein capture and release	Main supervisor	2021
Sophia Thiele	Master	The influence of crosslinking on the thermoresponsive behaviour of polymer brushes	Supervisor, Examiner	2020
Gustav Emilsson	PhD	Polymer brushes inside nanopores.	Main supervisor	2018
Kunli Xiong	PhD	Electrochromic plasmonic metasurfaces for reflective displays.	Main supervisor	2017
Michael Stürenberg	Licentiate	Investigating nonlinear effects of plasmonics.	Assistant supervisor	2016
Evelyn Röder	Master	Probing the binding behavior of negative curvature sensing proteins with a nanoplasmonic sensor.	Main supervisor	2016
Viktor Ahlberg-Gagnér	Master	Strongly stretched poly(ethylene glycol) brushes on plasmonic nanopores.	Main supervisor	2015
Juliane Junesch	PhD	Novel thin film nanohole devices for plasmonic sensing applications.	Assistant supervisor	2015
Virginia Claudio	Licentiate	Plasmonic nanostructures for biosensing: Considerations for reaching single molecule resolution.	Assistant supervisor	2013
Mudassar Virk	Master	Joule heating of nanohole arrays for control of thermo-responsive polymer brushes.	Main supervisor	2013
Group of 6	Bachelor	Determination of temperature in heated nanostructures.	Main supervisor	2013

## Examination

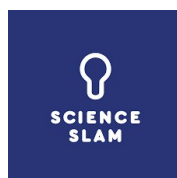
Student	Degree	University	My role	Year
Ali Shahrokhtash	PhD	Aarhus University	External examiner	2024
Sara Franzén	PhD	Lund University	Committee member	2023
Van Chinh Tran	PhD	Linköping university	Committee member	2023
Elin Forsling	MSc	Chalmers University of Technology	Examiner	2023
Jonathan Haglund	MSc	Chalmers University of Technology	Examiner	2023
Thias Floriano	PhD	Aarhus University	External examiner	2023
Olof Eskilsson	PhD	Linköping university	Committee member	2023
Tommy Dam	PhD	Lund University	Committee member	2022
Filip Cindric	MSc	Chalmers University of Technology	Examiner	2022
Oliver Jacobson Krstovic	MSc	Chalmers University of Technology	Examiner	2022
Padryk Merkl	PhD	Karolinska Institute	Committee member	2022
Lovisa Tengblad	MSc	Chalmers University of Technology	Examiner	2022
Sune Levin	PhD	Chalmers University of Technology	Committee member	2021
Shiyu Li	PhD	Uppsala University	Committee member	2021
Josefin Nissa	PhD	Linköping University	Committee member	2021
Xin Wen	PhD	Chalmers University of Technology	Committee member	2020
Vilhelm Müller	PhD	Chalmers University of Technology	Committee member	2020
Yanmo Wang	PhD	Chalmers University of Technology	Committee member	2019
Hans Dyrseli	PhD	Aarhus University	External examiner	2019
Damiano Verardo	PhD	Lund University	Committee member	2018
Hanna Camille Thomsen	PhD	University of Gothenburg	Committee member	2018
Miao Zhang	PhD	Royal Institute of Technology Stockholm	Committee member	2018
Irina Zubritskaya	PhD	Chalmers University of Technology	Committee member	2017
Bao D. Ho	Licentiate	Lund University	Opponent	2017
Da Zhang	PhD	Uppsala University	Committee member	2017
Pinar Frank	PhD	Austrian Institute of Technology Vienna	External examiner	2017
Jin Dai	PhD	Royal Institute of Technology Stockholm	Committee member	2016
Rafael Schoch	PhD	University of Basel	External examiner	2016

## Commissions of Trust

- Reviewer for the Swedish national board evaluating possible research misconduct (NPOF).
- Board member in the *Area of Advance Nano* at Chalmers.
- Coordinator of teaching at the Department of Chemistry and Chemical Engineering.

## Outreach

- Continuously developing my own research website with a popular science description of my work, videos of presentations, science theory etc.
- Mentor for young entrepreneurs in technology (Ung Företagsamhet) 2023.
- Jury member in the national semifinals for youth science projects (Unga Forskare) 2023-.
- Lecturer at the university for seniors in Stockholm 2023.
- Lecturer at "researchers night" (ForskarFredag), Falköping 2018.
- Participated in the local *Science Slam* competition in Göteborg 2017 (2<sup>nd</sup> place out of 8 competitors).
- Participated in the "science roulette" event at the Science Festival in Göteborg 4 times since 2013.
- Voluntary work with activities for children at the Science Festival in Göteborg 2002.



## Utilization

- Founder and vice CEO of *Nyctea Technologies AB* (2020) for applications of electrically controlled polymer brushes (Initially 42.5% of shares). Organization number 559274-1267.
- Founder and board member of *rdot AB* (2017) for electronic paper development. Organization number 559092-9831. (All shares sold in 2022.)
- Patent on *Electrochemical drug delivery*, international PCT application P41904247PCT (filed 19 November 2020). Active patent WO2021107836A1.
- Patent on *Switchable plasmonic display device*, international PCT application PCT/SE2017/050042 (filed 18 January 2017), international publication number WO2018/135983A1. No longer active.
- Patent on *Asymmetric nanoplasmonic structures for dual sensing* (T-10-073), European patent application EP10013193.7, priority date 01.10.2010. No longer active.
- Successful commercialization of developed nanoplasmonic sensors by partnering with *Inspiorion AB* (organization number 556798-8760). Product names "wells" and "caves", including application note #22.
- Product development with BioNavis Ltd (Tampere, Finland), see also application note #161.



Royal Swedish Academy of  
Engineering Sciences

Our research is included in **IVA's 100-list 2023** listing research projects focusing on **climate change, energy supply, welfare technology, cyber security** and **crisis preparedness**. Deemed to have great potential to benefit through commercialization, business and method development or societal impact.

## Teaching

- Main teacher and course responsible for *Surface Engineering* 7.5 ECTS credits (2018-).
- Teaching and course development in *Chemistry and Materials*, 7.5 ECTS credits (2017-).
- Teaching and course development in *Soft Matter Physics*, 7.5 ECTS credits (2013-2018).
- Teaching in *Biological Physics*, 7.5 ECTS credits (2017-2019).
- Teaching and course development in *Biotechnical Physics*, 7.5 ECTS credits (2013-2017).
- Teaching and course development in *Tools of Engineering Physics*, 10.5 ECTS credits (2012-2014).
- *As undergraduate*: Teaching in mathematics with focus on programming in MATLAB for first year undergraduate students (144 h total).
- *As Ph.D. student*: Various teaching assignments, mostly lab exercise development and supervision (5% of working time).
- *As postdoc*: Gave lectures on plasmonic biosensors at the Swiss Federal Institute of Technology, the Royal Institute of Technology in Stockholm and Chalmers University of Technology.

## Research Grants (selected)

*Artificial shuttle-cargo transport of proteins.*

Single applicant. Total funding 3 520 000 SEK.

**Swedish Research Council 2021** application/contract 2021-03968.

*Single molecule analysis in nanoscale reaction chambers 2.*

Single applicant. Total funding 1 999 550 EUR.

**European Research Council 2020** grant agreement 101001854.

*Hybrid electrochromic materials for energy saving displays.*

Main applicant. Total funding 30 739 424 SEK to 3 applicants.

**Swedish Foundation for Strategic Research 2018** application/contract EM16-0002.

*Single molecule analysis in nanoscale reaction chambers.*

Single applicant. Total funding 9 000 000 SEK.

**Erling-Persson Family Foundation 2017** (Swedish ERC Starting Grant replacement).

*Polymer brushes and molecular transport in nanofluidic channels.*

Single applicant. Total funding 3 400 000 SEK.

**Swedish Research Council 2016** application/contract 2016-03319.

*Macromolecular gates in nanofluidic channels.*

Single applicant. Total funding 8 500 000 SEK as "academy fellow".

**Wallenberg Foundation 2015** application/contract 2015.0161.

*Responsive polymers in active nanopores.*

Single applicant. Total funding 2 800 000 SEK, young researcher grant.

**Swedish Research Council 2012** application/contract 2012-4542.

*Active nanopores.*

Single applicant. Total funding 100 000 EUR as career integration grant.

**EU FP7 People Marie Curie 2012** application/contract 321821.

*Plasmonic antennas shine light on the nanoworld.*

Coapplicant. Total funding 37 000 000 SEK to 8 applicants.

**Wallenberg Foundation 2012.**

*Electrochemical gates in nanofluidic channels.*

Single applicant. Total funding 2 950 000 SEK for starting independent research activities in Sweden.

**Swedish Foundation for Strategic Research 2011** application/contract ICA10-0031.

*Sensing membrane transport using electrochemistry in nanowells.*

Coapplicant. Total funding 183 948 CHF for a PhD student project.

**Swiss National Science Foundation 2010.**

*Combined electrochemical and plasmonic analysis of biomolecular reactions in nanopores.*

Single applicant. Total funding 1 198 400 SEK for 2 years of postdoctoral work in Switzerland and 858 000 SEK for 1 year in Sweden.

**Swedish Research Council 2009** application/contract 2009-706.



## Publications: Research Papers

*Electrochromic passive matrix display utilizing diode-like redox reactions on indium-tin-oxide.*

O. Olsson, M. Gugole, J. C. Blake, I. Petsagkourakis, P. Andersson Ersman, [A. Dahlin](#).\*

**Advanced Engineering Materials** (accepted).

*Stable trapping of multiple proteins at physiological conditions using nanoscale chambers with macromolecular gates.*

J. Svirelis, Z. Adali-Kaya & G. Emilsson & J. Medin, J. Andersson, R. Vattikunta, M. Hulander, J. Järlebark, K. Kolman, O. Olsson, Y. Sakiyama, R. Y. H. Lim, [A. Dahlin](#).\*

**Nature Communications** **2023**, 14 (1), 5131 (article).

*Video-rate switching of high-reflectivity hybrid cavities spanning all primary colors.*

K. Xiong,\* O. Olsson, S. Rossi, G. Wang, M.P. Jonsson, [A. Dahlin](#), J. Baumberg.

**Advanced Materials** **2023**, 35 (31), e2302028 (research article).

*Polymer brushes on silica nanostructures prepared by aminopropylsilatrane click chemistry: superior antifouling and biofunctionality.*

J. Andersson, J. Järlebark, S. KK, A. Schaefer, R. Hailes, C. Palasingh, B. Santoso, V.-T. Vu, C.-J. Huang, F. Westerlund, [A. Dahlin](#).\*

**ACS Applied Materials & Interfaces** **2023**, 15 (7), 10228-10239 (research article).

*Comparison of electrodeposited and sputtered tungsten trioxide films for inorganic electrochromic nanostructures.*

M. Gugole, O. Olsson, V. Gupta, R. Bordes, E. Ahlberg, A. Martinelli, [A. Dahlin](#).\*

**ACS Applied Optical Materials** **2023**, 1 (2), 558-568 (article).

*Enhanced electrochromic switching contrast in the blue by 3,4-propylenedioxyppyrrrole - implementation on structural colors.*

O. Olsson, M. Gugole, [A. Dahlin](#).\*

**Nanophotonics** **2023**, 12 (8), 1591-1599 (research article).

*All-printed multilayers and blends of poly(dioxythiophene) derivatives patterned into flexible electrochromic displays.*

R. Brooke, I. Petsagkourakis, S. Majee, O. Olsson, [A. Dahlin](#), P. Andersson Ersman.\*

**Macromolecular Materials and Engineering** **2023**, 308 (2), 2200453 (research article).

*Scalable reflective plasmonic structural colors from nanoparticles and cavity resonances - the cyan-magenta-yellow approach.*

J. C. Blake & S. Rossi, M.P. Jonsson,\* [A. Dahlin](#).\*

**Advanced Optical Materials** **2022**, 10 (13), 2200471 (article).

*Electrically switchable polymer brushes for protein capture and release in biological environments.*

G. Ferrand-Drake del Castillo, M. Kyriakidou, Z. Adali, K. Xiong, R.L.N. Hailes, [A. Dahlin](#).\*

**Angewandte Chemie International Edition** **2022**, 61 (22), e202115745 (article).

*Accurate correction of the "bulk response" in surface plasmon resonance sensing provides new insights on interactions involving lysozyme and poly(ethylene glycol).*

J. Svirelis, J. Andersson, A. Stradner, [A. Dahlin](#).\*

**ACS Sensors** **2022**, 7 (4), 1175-1182 (article).

*Surface plasmon resonance sensing with thin films of palladium and platinum – quantitative and real-time analysis.*

J. Andersson, J. Svirelis, G. Ferrand-Drake del Castillo, T. Sannomiya, [A. Dahlin](#).\*

**Physical Chemistry Chemical Physics** **2022**, 24 (7), 4588–4594 (article).

*Simultaneous single-particle measurements of size and loading give insights into the structure of drug-delivery nanoparticles.*



12<sup>th</sup> March 2024

A. Kamanzi & Y. Gu & R. Tahvildari, Z. Friedenberger, X. Zhu, R. Berti, M. Kurylowicz, D. Witzigmann, J. A. Kulkarni, J. Leung, J. Andersson, [A. Dahlin](#), F. Höök, M. Sutton, P. R. Cullis, S. Leslie.\*

**ACS Nano 2021**, 15 (12), 19244-19255 (article).

*Dynamically tuneable reflective structural colouration with electroactive conducting polymer nanocavities.*

S. Rossi, O. Olsson, S. Chen, R. Shanker, D. Banerjee, [A. Dahlin](#), M.P. Jonsson.\*

**Advanced Materials 2021**, 33 (49), 2105004 (article).

*Video speed switching of plasmonic structural colors with high contrast and superior lifetime.*

K. Xiong, O. Olsson, J. Svirelis, C. Palasingh, J. Baumberg, [A. Dahlin](#).\*

**Advanced Materials 2021**, 33 (41), 2103217 (article).

*Electrochromic inorganic nanostructures with high chromaticity and superior brightness.*

M. Gugole, O. Olsson, S. Rossi, M. Jonsson, [A. Dahlin](#).\*

**Nano Letters 2021**, 21 (10), 4343-4350 (letter).

*Evaluation of the Forsvall biopsy needle in an ex vivo model of transrectal prostate biopsy - a novel needle design with the objective to reduce the risk of post-biopsy infection.*

A. Forsvall,\* J. Fisher, J. Francisco Pereira Cardoso, M. Wagenius, J. Tverring, B. Nilson, [A. Dahlin](#), O. Bratt, A. Linder, T. Mohanty.

**Scandinavian Journal of Urology 2021**, 55 (3), 227-234 (article).

*Control of polymer brush morphology, rheology and protein repulsion by hydrogen bond complexation.*

J. Andersson, G. Ferrand-Drake del Castillo, P. Bilotto, F. Höök, M. Valtiner, [A. Dahlin](#).\*

**Langmuir 2021**, 37 (16), 4943-4952 (article, cover featured).

*A designer FG-Nup that reconstitutes the selective transport barrier of the nuclear pore complex.*

A. Fragasso, H. de Vries, J. Andersson, E. van der Sluis, E. van der Giessen, [A. Dahlin](#), P. Onck, C. Dekker.\*

**Nature Communications 2021**, 2010 (article).

*Tuning the thermoresponsive behavior of surface-attached PNIPAM networks: varying the crosslinker content in SI-ATRP.*

S. Thiele, J. Andersson, A. Dahlin, R.L.N. Hailes.\*

**Langmuir 2021**, 37 (11), 3391-3398 (article).

*Large changes in protonation of weak polyelectrolyte brushes with salt concentration - implications for protein immobilization.*

G. Ferrand-Drake del Castillo & R.L.N. Hailes, [A. Dahlin](#).\*

**Journal of Physical Chemistry Letters 2020**, 11 (13), 5212-5218 (letter).

*High contrast switching of plasmonic structural colors: inorganic vs organic electrochromism.*

M. Gugole & O. Olsson, K. Xiong, J. Blake, J. Montero Amendo, I. Bayrak Pehlivan, G. Niklasson, [A. Dahlin](#).\*

**ACS Photonics 2020**, 7 (7), 1762-1772 (article, supplementary cover).

*Generic high-capacity protein capture and release by pH control.*

G. Ferrand-Drake del Castillo, R.L.N. Hailes, Z. Adali-Kaya, T. Robson, [A. Dahlin](#).\*

**Chemical Communications 2020**, 56, 5889-5892 (communication, back cover).

*Optical properties of plasmonic nanopore arrays prepared by electron beam and colloidal lithography.*

B. Malekian, K. Xiong, E. Kang, J. Andersson, G. Emilsson, M. Rommel, T. Sannomiya, M.P. Jonsson, [A. Dahlin](#).\*

**Nanoscale Advances 2019**, 1 (11), 4282-4289 (communication).

*Enzyme immobilization in polyelectrolyte brushes: High loading and enhanced activity compared to monolayers.*

G. Ferrand-Drake del Castillo, M. Koenig, M. Müller, K.-J. Eichhorn, M. Stamm, P. Uhlmann, [A. Dahlin](#).\*

**Langmuir** **2019**, 35 (9), 3479–3489 (article).

*Nanoplasmonic sensor detects preferential binding of IRSp53 to negative membrane curvature.*

G. Emilsson & E. Röder, B. Malekian, K. Xiong, J. Manzi, F.C. Tsai, N.-J. Cho, M. Bally, [A. Dahlin](#).\*

**Frontiers in Chemistry** **2019**, 7, 1 (article, Analytical Chemistry Editor's Pick).

*Detecting selective protein binding inside plasmonic nanopores: Toward a mimic of the nuclear pore complex.*

B. Malekian & R.L. Schoch, T. Robson, G. Ferrand-Drake del Castillo, K. Xiong, G. Emilsson, L.E. Kapinos, R.Y.H. Lim, [A. Dahlin](#).\*

**Frontiers in Chemistry** **2018**, 6, 637 (article).

*Quantitative analysis of thickness and pH-actuation of weak polyelectrolyte brushes.*

G. Ferrand-Drake del Castillo, G. Emilsson, [A. Dahlin](#).\*

**Journal of Physical Chemistry C** **2018**, 122 (48), 27516–27527 (article).

*Antibody-antigen interaction dynamics revealed by analysis of single-molecule equilibrium fluctuations on individual plasmonic nanoparticle biosensors.*

S.S. Aćimović, H. Šípová, G. Emilsson, L. Shao, [A.B. Dahlin](#), M. Käll, T.J. Antosiewicz.\*

**ACS Nano** **2018**, 12 (10), 9958–9965 (article).

*Gating protein transport in solid state nanopores by single molecule recognition.*

G. Emilsson, Y. Sakiyama, B. Malekian, K. Xiong, Z. Adali-Kaya, R.Y.H. Lim, [A.B. Dahlin](#).\*

**ACS Central Science** **2018**, 4 (8), 1007–1014 (article).

*Nanoplasmonic sensing architectures for decoding membrane curvature-dependent biomacromolecular interactions.*

A.R. Ferhan, J. Jackman, B. Malekian, K. Xiong, G. Emilsson, S. Park, [A.B. Dahlin](#), N.-J. Cho.\*

**Analytical Chemistry** **2018**, 90 (12), 7458–7466 (article).

*Polymer brushes inside solid state nanopores form an impenetrable entropic barrier for proteins.*

G. Emilsson, K. Xiong, Y. Sakiyama, B. Malekian, V. Ahlberg Gagnér, R.L. Schoch, R.Y.H. Lim, [A.B. Dahlin](#).\*

**Nanoscale** **2018**, 10 (10), 4663-4669 (communication).

*Protein exclusion is preserved by temperature sensitive PEG brushes.*

R. Schoch,\* G. Emilsson, [A.B. Dahlin](#), R.Y.H. Lim.

**Polymer** **2017**, 132, 362-367 (article).

*Switchable metasurfaces with high chromaticity containing only abundant metals.*

K. Xiong, D. Tordera, G. Emilsson, O. Olsson, U. Linderhed, M.P. Jonsson, [A.B. Dahlin](#).\*

**Nano Letters** **2017**, 7 (11), 7033-7039 (letter).

*Fabrication and characterization of plasmonic nanopores with cavities in the solid support.*

B. Malekian & K. Xiong, G. Emilsson, J. Andersson, C. Fager, E.M. Larsson-Langhammer, [A.B. Dahlin](#).\*

**Sensors** **2017**, 7 (6), 1444 (article).

*Superior LSPR substrates based on electromagnetic decoupling for on-a-chip high-throughput label-free biosensing.*

S.S. Aćimović, H. Šípová, G. Emilsson, [A.B. Dahlin](#), T. Antosiewicz, M. Käll.\*

**Light: Science & Applications** **2017**, 6, e17042 (article).

*Surface plasmon resonance methodology for monitoring polymerization kinetics and morphology changes of brushes - evaluated with poly(N-isopropylacrylamide).*

12<sup>th</sup> March 2024

G. Emilsson, R.L. Schoch, P. Oertle, K. Xiong, R.Y.H. Lim, [A.B. Dahlin](#).\*  
**Applied Surface Science** **2017**, 396, 384-392 (full length article).

*Plasmonic metasurfaces with conjugated polymers for flexible electronic paper in color.*  
K. Xiong, G. Emilsson, A. Maziz, X. Yang, L. Shao, E.W.H. Jager, [A.B. Dahlin](#).\*  
**Advanced Materials** **2016**, 28 (45), 9956-9960 (communication, inside back cover).

*Dual-wavelength surface plasmon resonance for determining the size and concentration of sub-populations of extracellular vesicles.*  
D.L.M. Rupert, G.V. Shelke, G. Emilsson, V. Claudio, S. Block, C. Lässer, [A.B. Dahlin](#), J.O. Lötvall, M. Bally, V.P. Zhdanov, F. Höök.\*  
**Analytical Chemistry** **2016**, 88 (20), 9980–9988 (article).

*Biosensing using plasmonic nanohole arrays with small, homogenous and tunable aperture diameters.*  
K. Xiong, G. Emilsson, [A.B. Dahlin](#).\*  
**Analyst** **2016**, 141 (12), 3803-3810 (article, Emerging Investigator issue).

*Location-specific nanoplasmonic sensing of biomolecular binding to lipid membranes with negative curvature.*  
J. Junesch, G. Emilsson, K. Xiong, S. Kumar, T. Sannomiya, H. Pace, J. Vörös, S.-H. Oh, M. Bally, [A.B. Dahlin](#).\*  
**Nanoscale** **2015**, 7 (37), 15080-15085 (communication).

*Plasmon enhanced internal photoemission in antenna-spacer-mirror based Au/TiO<sub>2</sub> nanostructures.*  
Y. Fang, Y. Jiao, K. Xiong, R. Ogier, Z.-J. Yang, S. Gao, [A.B. Dahlin](#), M. Käll.\*  
**Nano Letters** **2015**, 15 (6), 4059–4065 (letter).

*Strongly stretched protein resistant poly(ethylene glycol) brushes prepared by grafting-to.*  
G. Emilsson, R.L. Schoch, L. Feuz, F. Höök, R.Y.H. Lim, [A.B. Dahlin](#).\*  
**ACS Applied Materials & Interfaces** **2015**, 7 (14), 7505–7515 (article).

*Influence of the evanescent field decay length on the sensitivity of plasmonic nanodisks and nanoholes.*  
F. Mazzotta, T. Johnson, [A.B. Dahlin](#), J. Shaver, S.-H. Oh,\* F. Höök.\*  
**ACS Photonics** **2015**, 2 (2), 256–262 (article).

*A thermal plasmonic sensor platform: Resistive heating of nanohole arrays.*  
M. Virk & K. Xiong, M. Svedendahl, M. Käll, [A.B. Dahlin](#).\*  
**Nano Letters** **2014**, 14 (6), 3544–3549 (letter).

*Plasmonic nanopores in metal-insulator-metal films.*  
[A.B. Dahlin](#),\* M. Mapar, K. Xiong, F. Mazzotta, F. Höök, T. Sannomiya.  
**Advanced Optical Materials** **2014**, 2 (6), 556–564 (full paper, with frontispiece).

*Single-particle plasmon sensing of discrete molecular events: Binding position versus signal variations for different sensor geometries.*  
V. Claudio, [A.B. Dahlin](#), T. Antosievicz.\*  
**Journal of Physical Chemistry C** **2014**, 118 (13), 6980–6988 (article).

*Embedded plasmonic nanomenhirs as location-specific biosensors.*  
K. Kumar, [A.B. Dahlin](#), T. Sannomiya, S. Kaufmann, L. Isa, E. Reimhult.\*  
**Nano Letters** **2013**, 13 (12), 6122–6129 (letter).

*Optical resonances in short-range ordered nanoholes in ultrathin aluminum / aluminum nitride multilayers.*  
Y. Ikenoya, M. Susa, J. Shi, Y. Nakamura, [A.B. Dahlin](#), T. Sannomiya.\*  
**Journal of Physical Chemistry C** **2013**, 117 (12), 6373–6382 (article).

*Simultaneous electrical and plasmonic monitoring of potential induced ion adsorption on metal nanowire arrays.*

R. MacKenzie, C. Frascina, B. Dielacher, T. Sannomiya, [A.B. Dahlin](#), J. Vörös.\*  
**Nanoscale** **2013**, 5 (11), 4966–4975 (full paper).

*Optical properties of nanohole arrays in metal-dielectric double films prepared by mask-on-metal colloidal lithography.*

J. Junesch, T. Sannomiya, [A.B. Dahlin](#).\*  
**ACS Nano** **2012**, 6 (11), 10405–10415 (article).

*Nanoplasmonic sensing of metal-halide complex formation and the electric double layer capacitor.*

[A.B. Dahlin](#).\* R. Zahn, J. Vörös.  
**Nanoscale** **2012**, 4 (7), 2339–2351 (full paper).

*Investigation of plasmon resonances in metal films with nanohole arrays for biosensing applications.*

T. Sannomiya,\* O. Scholder, K. Jefimovs, C. Hafner, [A.B. Dahlin](#).\*  
**Small** **2011**, 7 (12), 1653–1663 (full paper, cover page).

*Electrochemical crystallization of plasmonic nanostructures.*

[A.B. Dahlin](#).\* T. Sannomiya, R. Zahn, G.A. Sotiriou, J. Vörös.  
**Nano Letters** **2011**, 11 (3), 1337–1343 (letter).

*Electrochemistry on a localized surface plasmon resonance sensor.*

T. Sannomiya, H. Dermutz, C. Hafner, J. Vörös, [A.B. Dahlin](#).\*  
**Langmuir** **2010**, 26 (10), 7619–7626 (article).

*Locally functionalized short-range ordered nanoplasmonic pores for bioanalytical sensing.*

M.P. Jonsson,\* [A.B. Dahlin](#), L. Feuz, S. Petronis, F. Höök.\*  
**Analytical Chemistry** **2010**, 82 (5), 2087–2094 (article).

*QCM-D studies of human norovirus VLPs binding to glycosphingolipids in supported lipid bilayers reveal strain-specific characteristics.*

G.E. Rydell, [A.B. Dahlin](#), F. Höök, G. Larson.\*  
**Glycobiology** **2009**, 19 (11), 1176–1184 (article).

*High-resolution microspectroscopy of plasmonic nanostructures for miniaturized biosensing.*

[A.B. Dahlin](#).\* S. Chen, M.P. Jonsson, L. Gunnarsson, M. Käll, F. Höök.\*  
**Analytical Chemistry** **2009**, 81 (16), 6572–6580 (article, accelerated publication).

*Synchronized quartz crystal microbalance and nanoplasmonic sensing of biomolecular recognition reactions.*

[A.B. Dahlin](#), P. Jönsson, M.P. Jonsson, E. Schmid, Y. Zhou, F. Höök.\*  
**ACS Nano** **2008**, 2 (10), 2174–2182 (article).

*Label-free plasmonic detection of biomolecular binding by a single gold nanorod.*

G.J. Nusz, S.M. Marinakos, A.C. Curry, [A. Dahlin](#), F. Höök, A. Wax, A. Chilkoti.\*  
**Analytical Chemistry** **2008**, 80 (4), 984–989 (article).

*Specific self-assembly of single lipid vesicles in nanoplasmonic apertures in gold.*

[A.B. Dahlin](#), M.P. Jonsson, F. Höök.\*  
**Advanced Materials** **2008**, 20 (8), 1436–1442 (communication).

*Supported lipid bilayer formation and lipid-membrane-mediated biorecognition reactions studied with a new nanoplasmonic sensor template.*

M.P. Jonsson, P. Jönsson, [A.B. Dahlin](#), F. Höök.\*  
**Nano Letters** **2007**, 7 (11), 3462–3468 (letter).

*Generic surface modification strategy for sensing applications based on Au/SiO<sub>2</sub> nanostructures.*  
R. Marie, [A.B. Dahlin](#), J.O. Tegenfeldt, F. Höök.\*  
**Biointerphases** **2007**, 2 (1), 49-54 (article).

*Quantitative interpretation of gold nanoparticle-based bioassays designed for detection of immunocomplex formation.*  
Y. Zhou, H. Xu, [A.B. Dahlin](#), J. Vallkil, C.A.K. Borrebäck, C. Wingren, B. Liedberg, F. Höök.\*  
**Biointerphases** **2007**, 2 (1), 6-14 (article).

*Improving the instrumental resolution of sensors based on localized surface plasmon resonance.*  
[A.B. Dahlin](#), J.O. Tegenfeldt, F. Höök.\*  
**Analytical Chemistry** **2006**, 78 (13), 4416-4423 (article).

*Plasmonic sensing characteristics of single nanometric holes.*  
T. Rindzevicius, Y. Alaverdyan, [A. Dahlin](#), F. Höök, D.S. Sutherland, M. Käll.\*  
**Nano Letters** **2005**, 5 (11), 2335-2339 (letter).

*Phospholipid vesicle adsorption measured in situ with resonating cantilevers in a liquid cell.*  
S. Ghatnekar-Nilsson,\* J. Lindahl, [A. Dahlin](#), T. Stjernholm, S. Jeppesen, F. Höök, L. Montelius.  
**Nanotechnology** **2005**, 16 (9), 1512-1516 (article).

*Localized surface plasmon resonance sensing of lipid-membrane-mediated biorecognition events.*  
[A. Dahlin](#), M. Zäch, T. Rindzevicius, D.S. Sutherland, M. Käll, F. Höök.\*  
**Journal of the American Chemical Society** **2005**, 127 (14), 5043-5048 (article).

## **Publications: Review Articles**

*Pore performance: artificial nanoscale constructs that mimic the biomolecular transport of the nuclear pore complex.*  
J. Andersson & J. Svirelis, J. Medin, J. Järleback, R. Hailes, [A. Dahlin](#).\*  
**Nanoscale Advances** **2022**, 4 (23), 4925-4937 (review, cover page).

*Biochemical sensing with nanoplasmonic architectures: we know how but do we know why?*  
A. Dahlin.\*  
**Annual Review of Analytical Chemistry** **2021**, 14, 4.1-4.17 (review).

*Active control of plasmonic colors: Emerging display technologies.*  
K. Xiong, D. Tordera, M.P. Jonsson, A.B. Dahlin.\*  
**Reports of Progress in Physics** **2019**, 82 (2), 024501 (report on progress).

*Sensing applications based on plasmonic nanopores: The hole story.*  
[A.B. Dahlin](#).\*  
**Analyst** **2015**, 140 (14), 4748-4759 (critical review).

*Promises and challenges of nanoplasmonic devices for refractometric biosensing.*  
[A.B. Dahlin](#) & N. Wittenberg, F. Höök, S.-H. Oh.\*  
**Nanophotonics** **2013**, 2 (2), 83-101 (review).

*Size matters: Problems and advantages associated with highly miniaturized sensors.*  
[A.B. Dahlin](#).\*  
**Sensors** **2012**, 12 (3), 3018-3036 (review).

*Electrochemical plasmonic sensors.*  
[A.B. Dahlin](#),\* B. Dielacher, P. Rajendran, K. Sugihara, T. Sannomiya, M. Zenobi-Wong, J. Vörös.  
**Analytical and Bioanalytical Chemistry** **2012**, 402 (5), 1773-1784 (review).

12<sup>th</sup> March 2024

*Nanoplasmonic biosensing with focus on short-range ordered nanoholes in thin metal films (review).*

M.P. Jonsson,\* [A.B. Dahlin](#), P. Jönsson, F. Höök.\*

**Biointerphases 2008**, 3 (3), FD30-FD40 (in focus review).

*Supported lipid bilayers, tethered lipid vesicles, and vesicle fusion investigated using gravimetric, plasmonic, and microscopy techniques.*

F. Höök,\* G. Stengel, [A.B. Dahlin](#), A. Gunnarsson, M.P. Jonsson, P. Jönsson, E. Reimhult, L. Simonsson, S. Svedhem.

**Biointerphases 2008**, 3 (2), FA108-FA116 (in focus review, cover page featured).

## **Publications: Book Contributions**

*Nanopore membranes for separation and sensing - a "prosperous" future.*

G. Emilsson,\* [A.B. Dahlin](#).

**Springer 2018**, Integrated Analytical Systems, Miniature Fluidic Devices for Rapid Biological Detection, edited by S.H. Oh & C. Escobedo & A.G. Brolo, 1-23 (book chapter).

*Nanoantennas for refractive index sensing.*

T. Shegai,\* M. Svedendahl, S. Chen, [A.B. Dahlin](#), M. Käll.

**Cambridge University Press 2013**, Optical Nanoantennas, edited by M. Agio, 361-377 (book chapter).

*Performance of nanoplasmonic biosensors.*

[A.B. Dahlin](#),\* M.P. Jonsson.

**Springer 2012**, Integrated Analytical Systems, Nanoplasmonic Sensors, edited by A. Dmitriev, 231-265 (book chapter).

*Nanoplasmonic sensing combined with artificial cell membranes.*

M.P. Jonsson,\* [A.B. Dahlin](#), F. Höök.

**Springer 2012**, Integrated Analytical Systems, Nanoplasmonic Sensors, edited by A. Dmitriev, 59-82 (book chapter).

*Plasmonic biosensors: An integrated view of refractometric detection.*

[A.B. Dahlin](#).\*

**IOS Press 2012**, Advances in Biomedical Spectroscopy 4 (sole author book).



## Conference Contributions (selected)

### *International Symposium on Polyelectrolytes*

Electrochemically switchable polyelectrolyte brushes (invited speaker).

**Prague, Czech Republic, 2023.**

### *TSRC Nuclear Pore Complexes and Smart Polymers*

A fully artificial nuclear pore complex using hydrogen bonds (invited speaker).

**Telluride, USA, 2022.**

### *Polymer Brushes: New Developments and Perspectives in Experiment, Theory and Applications*

Poly(carboxylic acid) brushes and proteins: interactions and switchable interfaces (oral presentation).

**Online 2021.**

### *META 2021*

Plasmonic electronic paper (invited speaker).

**Online 2021.**

### *EBSA 2021*

Protein trapping in nanopores with macromolecular gates (oral presentation).

**Online 2021.**

### *ACS Fall Meeting*

Nanoscale reaction chambers with macromolecular gates (invited speaker).

**Online 2020.**

### *IEEE Nanotechnology Materials and Devices*

Macromolecular gates (invited speaker).

**Stockholm, Sweden, 2019.**

### *10<sup>th</sup> International Conference on Materials for Advanced Technologies*

Macromolecular gates (invited speaker).

**Marina Bay Sands, Singapore, 2019.**

### *Molecular Plasmonics*

Macromolecular gates in plasmonic nanopores (invited speaker).

**Jena, Germany, 2019.**

### *TSRC Nuclear Pore Complexes and Smart Polymers*

Macromolecular gates (invited speaker).

**Telluride, USA, 2018.**

### *Gordon Research Conference – Biointerface Science*

Trapping proteins in nanoscale chambers with macromolecular gates (poster presentation).

**Il Ciocco, Italy, 2018.**

### *SelectBIO - Biodetection and Biosensors*

Plasmonic nanopores: Towards combined filtration and sensing (invited speaker).

**Cambridge, UK, 2017.**

### *European Material Research Society – Autumn Meeting*

Plasmonic electronic paper (oral presentation).

**Warsaw, Poland, 2017.**

### *Gordon Research Conference – Biointerface Science*

Capturing proteins by facilitated diffusion through macromolecular gates on plasmonic nanopores (poster presentation).

**Les Diablerets, Switzerland, 2016.**

*Elsevier – Biosensors 2016*

Location-specific nanoplasmonic detection of biomolecular interactions on lipid membranes with negative curvature (oral presentation).

**Gothenburg, Sweden, 2016.**

*15<sup>th</sup> Dresden Polymer Discussions*

Macromolecular gates: Polymer brushes on nanopores (invited speaker).

**Meissen, Germany, 2016.**

*Europt(r)ode 2016*

Nanoplasmonic sensors: Utilizing nanoscale geometry (invited speaker).

**Graz, Austria, 2016.**

*Nanobiotech Montreux*

Polymer-functionalized plasmonic nanopores (poster presentation).

**Montreux, Switzerland, 2015.**

*SciX 2015*

Nanoplasmonic sensors: unique applications (invited speaker).

**Providence, USA, 2015.**

*10<sup>th</sup> European Biophysics Congress*

Nanosieves formed by poly(ethylene glycol) brushes on plasmonic nanopores (poster presentation).

**Dresden, Germany, 2015.**

*Micronano System Workshop*

Polymer gates in nanopores (poster presentation).

**Uppsala, Sweden, 2014.**

*European Science Foundation – Biological Surfaces and Interfaces*

Polymer brush morphology at nanopore openings (poster presentation).

**Sant Feliu de Guixols, Spain, 2013.**

*Gordon Research Conference/Seminar – Biointerface Science*

PEGs in pores – the struggle for freedom (poster/oral presentation).

**Les Diablerets, Switzerland, 2012.**

*European Material Research Society – Spring Meeting*

Biosensing with nanohole arrays – The (w)hole story (oral presentation).

**Strasbourg, France, 2012.**

*Nanoplasmonic Sensing and Spectroscopy*

Plasmonic monitoring of electrochemical processes (poster/oral presentation).

**Göteborg, Sweden, 2011.**

*European Material Research Society – Spring Meeting*

Plasmonic monitoring of electrochemical processes (keynote presentation).

**Nice, France, 2011.**

*Third International NanoBio Conference*

Electrochemical processes in plasmonic nanostructures (poster presentation).

**Zürich, Switzerland, 2010.**

*Gordon Research Conference/Seminar – Plasmonics*

Electrochemical potential influence on nanoplasmonic resonances (poster/oral presentation).

**Waterville, USA, 2010.**

12<sup>th</sup> March 2024

*Elsevier – Biosensors World Congress 2010*

Nanostructured surfaces for combined optical, mechanical and electrical sensing (poster presentation).

**Glasgow, Scotland, 2010.**

*ETH – Functionalized Plasmonic Nanostructures for Biosensing*

Combining nanoplasmonic sensors with electrochemistry (poster presentation).

**Ascona, Switzerland, 2010.**

*Gordon Research Conference – Biointerface Science*

Combining nanoplasmonics with lipid membranes (poster presentation).

**Aussois, France, 2008.**

*China-Sweden Workshop on Nanoscience and Technology*

Nanoplasmonic apertures for biosensing applications related to lipid membranes (invited speaker).

**Beijing, China, 2008.**

*European Science Foundation - Biological Surfaces and Interfaces*

Combining localized surface plasmon resonance with artificial lipid membranes (poster presentation).

**Sant Feliu de Guixols, Spain, 2007.**

*Second Nanowire Symposium – Life Science*

A nano-optical sensor for studies of lipid-membranes (oral presentation).

**Lund, Sweden, 2006.**

*Gordon Research Conference – Biointerface Science*

Localized surface plasmon resonance sensing of lipid membranes (poster presentation).

**Les Diablerets, Switzerland, 2006.**

*American Chemical Society - Spring Meeting*

Extinction spectroscopy for sensors based on localized surface plasmon resonance (oral presentation).

**Atlanta, USA, 2006.**

*Max Planck Institute for Physics - Functional Solid Supported Biomolecular Lipid Membranes*

Localized surface plasmon resonance sensing of reactions confined to lipid membranes (poster presentation).

**Ringberg, Germany, 2005.**

## Reviewing Assignments

- **Nature Materials**
- **Nature Communications**
- **Proceedings of the National Academy of Sciences of the United States of America**
- **Science Advances (AAAS)**
- **Scientific Reports (Springer Nature)**
- **Nano Research (Springer Nature)**
- **Nano Letters (ACS)**
- **ACS Nano**
- **Journal of the American Chemical Society**
- **Chemistry of Materials (ACS)**
- **Analytical Chemistry (ACS)**
- **Langmuir (ACS)**
- **Journal of Physical Chemistry Letters (ACS)**
- **Journal of Physical Chemistry C (ACS)**
- **Biomacromolecules (ACS)**
- **Molecular Pharmaceutics (ACS)**
- **ACS Applied Materials & Interfaces**
- **ACS Applied Polymer Materials**
- **ACS Photonics**
- **ACS Sensors**
- **ACS Omega**
- **Angewandte Chemie (Wiley)**
- **Advanced Materials (Wiley)**
- **Advanced Functional Materials (Wiley)**
- **Advanced Optical Materials (Wiley)**
- **Small (Wiley)**
- **Particle & Particle Systems Characterization (Wiley)**
- **Annalen der Physik (Wiley)**
- **Chemistry - An Asian Journal (Wiley)**
- **Physical Review Applied (APS)**
- **Chemical Communications (RSC)**
- **Nanoscale Horizons (RSC)**
- **Nanoscale (RSC)**
- **Lab on a Chip (RSC)**
- **RSC Advances**
- **Analyst (RSC)**
- **Green Chemistry (RSC)**
- **Journal of Materials Chemistry B (RSC)**
- **Materials Horizons (RSC)**
- **Biomaterials Science (RSC)**
- **Photonics and Nanostructures - Fundamentals and Applications (Elsevier)**
- **Sensors and Actuators B: Chemical (Elsevier)**
- **Colloids and Surfaces B: Biointerfaces (Elsevier)**
- **Electrochemistry Communications (Elsevier)**
- **Micron (Elsevier)**
- **Applied Surface Science (Elsevier)**
- **Separation and Purification Technology (Elsevier)**
- **Analytical and Bioanalytical Chemistry (Springer)**
- **Plasmonics (Springer)**
- **Bionanoscience (Springer)**
- **Nanoscale Research Letters (Springer)**
- **Biointerphases (AVS)**
- **Applied Physics Letters (AIP)**
- **Nanotechnology (IOP)**
- **Journal of Applied Physics (IOP)**
- **Journal of Optics (IOP)**
- **Journal of Physics D: Applied Physics (IOP)**

- **Science and Technology of Advanced Materials (IOP)**
- **Nanophotonics (de Gruyter)**
- **Journal of the Optical Society of America B**
- **Optics Express (OSA)**
- **Optical Materials Express (OSA)**
- **Biomedical Optics Express (OSA)**
- **Expert Review of Molecular Diagnostics (Informa Healthcare)**
- **Sensors (MDPI)**
- **Biosensors (MDPI)**
- **Current Nanoscience (Bentham)**
- **Progress in Electromagnetics Research**
- **Nanotechnology and Nanomaterials (InTech)**
- **Journal of Nanophotonics (SPIE)**
- **IEEE Photonics**
  
- **European Research Council**
- **ETH Zürich Research Commission (Switzerland)**
- **United States Israel Binational Science Foundation**
- **National Science Foundation (USA)**
- **The Netherlands Organisation for Scientific Research (NWO)**
- **M.J. Murdoch Charitable Trust (USA)**
- **Knut & Alice Wallenberg Foundation (Sweden)**
- **The Royal Society (UK)**
- **Engineering and Physical Sciences Research Council (UK)**
- **FWF Austrian Science Fund**
- **Deutsche Forschungsgemeinschaft (Germany)**
- **Human Frontier Science Program (France)**