

## Curriculum Vitae – Andreas Dahlin

**Full name:** Andreas Bo Oscar Dahlin

**Title:** Professor

**Position:** Professor in applied surface science.

**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)

**Twitter:** @ABDahlin

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

**ORCID:** [0000-0003-1545-5860](https://orcid.org/0000-0003-1545-5860)



Web of Science  
ResearcherID

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ResearchGate

Google scholar

### Previous Employment

**Associate Professor** @ Dept. of Chemistry and Chemical Engineering, Chalmers University of Technology, Göteborg, Sweden. (November 2016 – January 2021)

**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)

**CHALMERS**



**ETH**

Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich



**LUND**  
UNIVERSITY

### Career Breaks

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

### Academic Degrees

**Professor** - Chemistry, 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).

## Quantitative Merits

- 60 research papers.
- 8 review papers.
- 4 book chapters.
- 1 sole author book.
- 4 graduated PhDs (main supervisor).
- 22 conference talks.
- 16 poster contributions.
- Reviewer for 68 scientific journals.
- Reviewer for 10 research funding agencies.
- Principal investigator for 10 externally funded research grants.
- Co-applicant for 2 externally funded research projects.

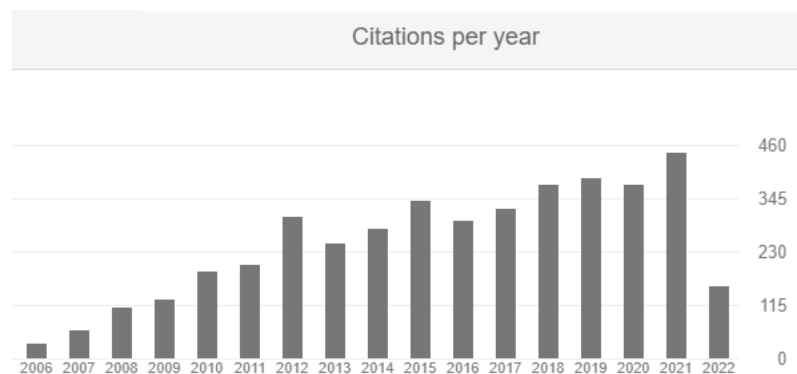
## Awards (selected)

- 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 the *Science Slam* 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).
- Cover page article of *Small* 2011, Issue 12.
- Swedish Research Council Postdoctoral Scholarship (2009).



## Citation Metrics

**Source: Google Scholar**  
**Entries with citation data: 72**  
**Total number of citations: 4294**  
**h-index: 33**  
**i10-index: 53**



## Supervision

Student	Degree	Title of thesis	My role	Year
Bitá 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	Main supervisor	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
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 *Excellence Initiative Nano* at Chalmers.
- Coordinator of teaching at my division.

## 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.

## Outreach

- Continuously developing my own research website with a popular science description of my work, videos of presentations, science theory etc.
- 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 (42.5% of shares). Organization number 559274-1267.
- Founder and board member of *rdot AB* (2017) for plasmonic electronic paper development (6% of shares). Organization number 559092-9831.
- Patent on *Electrochemical drug delivery*, international PCT application P41904247PCT (filed 19 November 2020).
- 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 *Insplosion 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.

## 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

*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** (accepted).

*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** (accepted).

*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** (accepted).

*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.*

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. Ćimović, 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).

21<sup>st</sup> April 2022

*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).*

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. Antosiewicz.\*

**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. Fraschina, 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).

21<sup>st</sup> April 2022

*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**

*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).

*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)

*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).

21<sup>st</sup> April 2022

**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.**

*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 (ACS)**
- **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 and 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)**
- **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)**
- **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)**
- **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**
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- **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)**