

# Curriculum Vitae – N. Asger Mortensen

## Professor & VILLUM Investigator

### Work address:

- Center for Nano Optics, Mads Clausen Institute, University of Southern Denmark, Campusvej, DK-5230 Odense, Denmark

### Personal data:

- Date and place of birth: May 6, 1973, Hillerød, Denmark • Citizenship: Denmark
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- Group URL: [www.sdu.dk/nano-optics](http://www.sdu.dk/nano-optics) • Personal URL: [www.mortensen-lab.org](http://www.mortensen-lab.org)
- Researcher ID: [C-3592-2008](https://orcid.org/0000-0001-7936-6264) • ORCID ID: [0000-0001-7936-6264](https://orcid.org/0000-0001-7936-6264)



### Education & Academic degrees:

- *Dr. Scient.* (physics), University of Copenhagen (2021)
- *Dr. Techn.* (optics), Technical University of Denmark (2006)
- *PhD* (theoretical physics), Technical University of Denmark (2001)
- *MSc in Engineering* (applied physics), Technical University of Denmark (1998)
- *Studentereksamen*, Sorø Akademis Skole (1992)

### Miscellaneous training:

- *Certificate in Global Management*, INSEAD (2018–2020)
- *The DTU Leadership Programme*, Technical University of Denmark (2014–2015)
- *Education in University Teaching at DTU*, Technical University of Denmark (2004–2005)

### Employment track & research affiliations:

- Professor (full), Mads Clausen Institute, Faculty of Engineering, University of Southern Denmark (2017–present)
- Professor (full), Department of Photonics Engineering, Technical University of Denmark (2011–2017)
- Associate Professor (tenure), Department of Photonics Engineering, Technical University of Denmark (2008–2011)
- Associate Professor (tenure), Department of Micro and Nanotechnology, Technical University of Denmark (2005–2008)
- Associate Professor, Department of Micro and Nanotechnology, Technical University of Denmark (2004–2005)
- Research Scientist, Crystal Fibre A/S (now NKT Photonics), Denmark (2001–2004)
- Research Assistant, Mikroelektronik Centret, Technical University of Denmark (Aug./Sep. 2001)
- PhD Fellow (DTU PhD Scholar), Mikroelektronik Centret, Technical University of Denmark (1999–2001)
- Research Assistant, Mikroelektronik Centret, Technical University of Denmark (Oct. 1998–Feb. 1999)
- Teaching Assistant, Department of Physics, Technical University of Denmark (Feb.–May 1998 + Sep.–Dec. 1997)

### CoE affiliations & group-leader positions:

- VILLUM Investigator, [SDU Center for Nano Optics](http://www.sdu.dk/nano-optics) (2017–present)
- DIAS Chair of Technical Sciences, [Danish Institute for Advanced Study](http://www.dias.ku.dk) (2017–present)
- Work-package leader (graphene plasmonics), [CNG – DNRFF Centre of Excellence](http://www.cng-dnrf.dk) (2012–present)
- Work-package leader (theory), [NATEC - VKR Centre of Excellence](http://www.natec-vkr.dk) (2008–2015)
- Associated Researcher, [CASE – UNIK Centre of Excellence](http://www.case-unik.dk) (2009–2014)
- DTU Research-group Leader [my former group: [www.fotonik.dtu.dk/SEM](http://www.fotonik.dtu.dk/SEM)] (2006–2017)

### Visiting scientist affiliations:

- Abbe School of Photonics, Friedrich–Schiller–Universität Jena (Mar.–Apr. 2015) [host: Prof. T. Pertsch]
- Instituut-Lorentz, Universiteit Leiden (Oct. – Dec. 2000) [host: Prof. C.W.J. Beenakker]
- Ørsted Lab., Niels Bohr Institute, University of Copenhagen (Feb. 1999–Aug. 2001) [host: Prof. K. Flensberg]
- Instituut-Lorentz, Universiteit Leiden (Sep. 1998) [host: Prof. C.W.J. Beenakker]
- Danish National Metrology Institute (Feb.–Aug. 1998) [host: Prof. K. Flensberg]

### Selected honors & awards:

- Elected Fellow of European Academy of Sciences (EURASC, 2019)
- Elected Fellow of Institute of Physics (IOP, 2018)
- Minister's Elite Researcher Prize (UFM, 2018)
- Elected Member of Danish Academy of Natural Sciences (DNA, 2017)
- Elected Fellow of American Physical Society (APS, 2017)
- VILLUM Investigator (VILLUM Fonden, 2017)
- Elected Fellow of Optical Society of America (OSA, 2016)
- Elektroprisen from Danish Society of Engineers (IDA, 2014)
- Elected Fellow of International Society for Optics and Photonics (SPIE, 2014)
- Elected Member of Danish Academy of Technical Sciences (ATV, 2014)
- European Optics Prize from European Optical Society (EOS, 2008)

- Young Researcher Participant @ Meeting of Nobel Prize Winners in Physics (Lindau Nobel Laureate Meetings, 2008)
- Young Elite Researcher's Award from Danish Councils for Independent Research (2008)
- Statoilprisen from Statoil Denmark (2007)
- Strategic Program for Young Researchers from Danish Council for Strategic Research (2005)
- European Optics Prize from European Optical Society (EOS, 2004)

#### Selected funding, Principal Investigator (51+ MDKK) [Co-applicant (75+ MDKK)]

- Elite Researcher Prize, Independent Research Fund Denmark (2018-2021) [grant #7079-00043B, 1 MDKK]
- "Quantum plasmonics" (2017–2023) [VILLUM Investigator grant, VILLUM Fonden, ~40 MDKK]
- "Theory of quantum plasmonics" (2013–2017) [FNU grant #12-133429, ~4.2 MDKK]

#### Co-applicant and Key Investigator in Centers of Excellence (~145 MDKK):

- VILLUM Fonden (2008–2019), "Nanophotonics for Tera-bit Communications (NATEC)" [~55 MDKK]
- Danish National Research Foundation (2012–2022), "Center for Nanostructured Graphene (CNG)" [~90 MDKK]

#### Research leadership & selected professional activities/services:

- Member of Committee on Interdisciplinary Research, Novo Nordisk Foundation (2019– present)
- Associate Editor of Science Advances [published by AAAS] (2020– present)
- Editorial Board Member of Nanophotonics [published by De Gruyter] (2020– present)
- Editorial Board Member of Journal of Physics: Condensed Matter [published by IOP] (2017 – present)
- Associate Editor of Optics Express [published by OSA] (2010 – 2016)
- Grant-proposal reviewer for: United States – Israel binational science foundation [BSF] (2007, 2017), The Danish Research Council for Technology and Production Sciences [FTP] (2007), Israel Science Foundation [ISF] (2008, 2010, 2014, 2021), Hercules Stichting (2008), Swiss National Science Foundation (2008), F.R.S.-FNRS Fonds de la Recherche Scientifique (2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019), Deanship of Scientific Research – King Fahd Univ. of Petroleum & Minerals, Saudi Arabia (2011, 2012, 2020), Belgian Science Policy Office [BELSPO] (2012), Scientific and Technological Research Council of Turkey [TUBITAK] (2012), The Romanian National Council for Scientific Research (2012), Royal Swedish Academy of Sciences/Wallenberg Foundation (2012), Israel Strategic Alternative Energy Foundation [I-SAEF] (2013), National Science Centre, Poland (2013, 2015), Research Council for Natural Sciences and Engineering, Academy of Finland (2014, 2015, 2016, 2017, 2018), The Netherlands Organisation for Scientific Research [NWO] (2014), L'Agence Nationale de la Recherche [ANR] / Deutsche Forschungsgemeinschaft [DFG] (2014), Research Foundation - Flanders - FWO (2015), National Research Council Canada [NRC] (2018), Science Foundation Ireland [SFI] (2019), Research Council of Norway (2020, 2021), European Research Council [ERC] (2018, 2019).
- Supervision of 24 Phd students, 25 postdocs, and mentoring of 9 assistant professors. For full details, see <http://academictree.org/physics/peopleinfo.php?pid=47609>

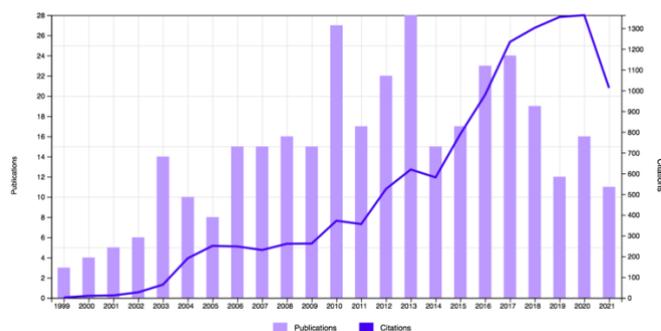
#### Research activities:

My current research focus is on new wave phenomena and light-matter interactions in artificially structured materials. In particular, I am interested in situations where classical electrodynamics is interfacing regimes with quantum physics. With emphasis on the electrodynamics of electrons in metal nanostructures and their quantum plasmonic behavior, I have contributed to the forefront developments of **semiclassical nonlocal hydrodynamic models** and the formulation of **quantum-corrected mesoscopic boundary conditions**, incorporating microscopic surface-response functions into classical electrodynamics. Experimentally, my research group has engaged in novel electron-based spectroscopies (electron-energy loss spectroscopy and cathodoluminescence spectroscopy) that allow exploration of **plasmonic phenomena with down-to-atomic-scale resolution**.

Research expertise and experience include quantum physics, condensed matter theory, many-body physics, mesoscopic physics, 2D materials, electromagnetic waves, fiber optics, nanophotonics, microfluidics, and optofluidics.

#### Publication and citation statistics:

- [280+ scientific papers in international peer-review journals](#),
- 75+ publications in high-impact journals ( $7 \leq \text{JIF} < 75$ )



- 10 Highly Cited papers, i.e. top 1% of the academic field of Physics [Source: Essential Science Indicators, September 2021]
- 12.000+ citations, h=57, h<sub>5</sub>=23 [Source: ISI Web of Knowledge, September 2021]