

Curriculum Vitae

Personal Information

Name: E.A. Dawi
Title: Associate Professor in Physics
Date of birth: 08.01.1974
Nationality: Dutch
Permanent Address/Country: Tafelbergdreef 90/3564AC/ Utrecht, the Netherlands.
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QUALIFICATIONS

Years: 2005-2009
University, City, Country: Debye institute for Nanophotonics and Nanomaterials Science, Utrecht University, the Netherlands, *QS ranking 2020 #120, 1st Dutch university for 17 years in a row, 51 rank in Europe.*
Degree (y/n) & title: **PhD** in Physics, September 2009.
Thesis title: **Nanoplasmonics for renewable energy applications.**

Years: 2002-2005
University, City, Country: Linkoping Institute of Technology, Linkoping University, Sweden.
Degree (y/n) & title: **M. Sc** in Materials Physics and Nanotechnology, February 2004.
Thesis title: **SiGe quantum dots for mid/far infrared detection.**

WORK EXPERIENCE

Job title: Associate Professor in Physics, Ajman University, UAE.
(2020-Now).

Job title: *Assistant Professor in Physics (2016-2020)*
Responsibilities:

- Teaching Physics courses of undergraduate students of the BSc degree of the faculties of Dentistry, Engineering and Humanities and Science.
- Build an independent research program in nanotechnology for renewable energy, sustainable technologies, optical enhancement and nanoparticles assembly.
- Participate in committee(s) and other activities for the development of the department, university in addition to community service.
- CRC member, coordinator of the faculty subject timetable and final examination membership.
- Publication, academic and scientific documentation and international representation.

Job title: *Sr. R&D Scientist*
Institution, City, Country: Eindhoven University of Technology, Eindhoven, the

Years:	Netherlands, HyETSolar B.V, Arnhem, the Netherlands. Sept 2011- July 2016
Responsibilities:	<ul style="list-style-type: none">- Developing technologies for production and marketing of flexible, lightweight Nanoplasmonic based solar modules on co-polymeric thermoplastic films based on roll-to-roll processing steps.- Solar Module Inline performance monitoring, quality check and diagnostics of material properties by using several optical techniques.- Deposition of TCO, PECVD of the active (a-Si: H/μc-Si: H) thin-film layers.- Cost effectiveness, solar module integration and validation at customer and co-developing partner's side.- Inline roll lamination, module encapsulation, top-bottom sheet manipulation, module inter-connection and accelerated lifetime analysis.- Research publications and IP registration.
Accomplishments:	<ul style="list-style-type: none">- Business development account within the EU and ME region
Job title:	<i>Postdoctoral fellow in Semiconductor Nanophotonics.</i>
Institution, City, Country:	Eindhoven University of Technology, Eindhoven, the Netherlands.
Years:	Sept 2009-August 2011
Responsibilities:	<ul style="list-style-type: none">- Research on single, multi-junctions, nano-plasmonic based concentrator solar cells.- Device manufacturing and performance testing including:<ul style="list-style-type: none">o Growth of Au catalysts axial and co-axial (p-i-n) GaAs semiconducting nanowires.o Cleaning room processing and fabrication of III/V based nanowires nano-concentrator solar cells.o Carrier mobility and charge transport measurements.- Optoelectronic characterization including Photoluminescence, optical absorption, IR and Raman spectroscopy, AFM, SEM, EDS, XRD, HRTEM, FIB, Raman and XPS.- Design and modelling and experimental demonstration of cell efficiency principles using home build finite element simulation software (FDTD).- Teaching of undergraduate students (level 1-3 of the BSc/MSc students).- Publication and scientific documentation and conference representation.
Accomplishments:	<ul style="list-style-type: none">- Device configuration and preliminary testing assembly- Nanoplasmonic particles integration and assembly- Development of modelling and simulation testing

Job title: *PhD Candidate in Nanophotonics and Nanoplasmonics*
Institution, City, Country: Utrecht University, Utrecht, the Netherlands.
Years: June 2005-Sept 2009
Responsibilities:

- Research on the tunable optical properties of embedded metallic nanoparticles for future light applications (8~100 nanometer diameter), i.e. Au, Ag, Pt, and Co embedded in amorphous, dielectric and crystalline thin films by using energetic ion beams.
- Electron beam lithography and patterning of Si/SiO₂ surfaces for fabrication of arrays of Au nanoprisms.
- Optical technique optimization and instrumentation imaging, i.e. AFM, SEM, XRD and TEM. (The work has resulted in a number of publications).
- Daily supervisor for master/bachelor students.
- Teaching/Lecturing bachelor/master students.
- Oral Presentations/Posters at national/international conferences.

Accomplishments:

- Building of in-house ion beam setup for shape modification of Nanoplasmonic particles
- Publication and research scientific review

Job title: *MSc in material Physics and Nanotechnology*
Institution, City, Country: Linköping University, Linköping, Sweden.
Surface and Semiconductors Physics Group/Institute för Fysik och Mätteknik (IFM), Linköping Institute of technology, Linköping, Sweden (until Feb 2004 and as project responsible until May 2005).
Years: September 2002-February 2004
Responsibilities:

- Growth of Si/SiGe quantum dots using Molecular Beam Epitaxy (MBE).
- Cleaning room processing and fabrication of mid/far infrared photo-detectors.
- Oral Presentations/Posters at national/international conferences.
- Publication and research scientific review

LANGUAGES

- English/Dutch/Arabic

COMPUTER SKILLS

- Expert in MS office, simulation and modelling.

PERSONAL INTERESTS

Reading, Swimming, Playing football, cards and chess.

ADDITIONAL INFO

Fields of expertise:

- Optical Properties of nanoplasmonic particles for

	Nanophotonics, Product development and fabrication, flexible solar modules, Roll-to-roll processing and final product testing.
Experience:	- 10+ hands-on experience on thermoplastic film lamination and adhesion process, Various optical characterization and analysis techniques for thin films/bulk materials, Knowledge of Semiconductor technology, cleaning room processing and fabrication Effective implementation and brainstorming, Modelling/simulation techniques AFM, SEM, XRD and TEM., International network in the academia (nano) optics and Complex optical experiments.
Skills:	Leadership, analytical, pragmatic attitude, self-motivated, hands-on, pro-active, independent and cross-functional teamwork, excellent communication (written and verbal), networker, time management.
Scientific Journals membership of:	Journal of Applied Physics, American Journal of Physics, Physica A, Journal of Nanotechnology, Nuclear instrumentation and methods and Japanese applied physics Technology.
Funding received:	Netherlands Foundation for Fundamental Research on Matter, SenterNovem, AkzoNobel Research Fund and Research Corporation.
Trainings:	Leadership and scientific writing.

SELECTED PUBLICATIONS:

- 1- Plasmon-Enhanced Light Absorption in (p-i-n) Junction GaAs Nanowire Solar Cells: An FDTD Simulation Method Study**, Authors: E. A. Dawi, A. A. Karar, E. Mustafa, and O. Nur, Nanoscale Research Letters 16, 149 (2021). <https://doi.org/10.1186/s11671-021-03603-1>.
- 2- Centrality dependence of PT distributions and nuclear modification factor of charged particles in Pb-Pb interactions at SNN=2.76 TeV**, Authors: Muhammad Ajaz, Abd Al Karim Haj Ismail, Awais Ahmed, Zafar Wazir, Ramoona Shehzadi, Hannan Younis, Gulzar Khan, Rashid Khan, Sajad Ali, Muhammad Waqas, Pei-Pin Yang, and E. A. Dawi, Results in Physics 30 (2021) 104790.
- 3- Estimation of the clearness index with meteorological parameters in the United Arab Emirates using mathematical models**, Authors: A. Haj Ismail, E. A. Dawi, and A. Jwaid, Arab Journal of Basic and Applied Science, (2021).
- 5- Study of Structural, Optical and Electrical Characterization of FeO-Doped-ZnO Nanoparticles**, A. Haj Ismail, F. Haj Jneed, and E. Dawi, (2021).
- 6- Simulation of the evolution of the COVID-19 pandemic in the United Arab Emirates using the SIR epidemical model**, Authors: A. Haj Ismail, E.A. Dawi, A. AbdelKader, Saleh

- T. Mahmoud, and T. Jwaid, Arab Journal of Basic and Applied Science, (2021).
- 7- **Precautionary measures and the first wave evolution of Covid-19: a comparison study**, Authors: A. Haj Ismail, T. Jwaid, E.A. Dawi, A. AbdElKader, International Journal of Pharmaceutical Research, Vol. 12, Issue 4, 4391-4394 (2020).
 - 8- **Growth of Interface Region in 2D Wet Foam**, Authors: A. AbdElKader, E.A. Dawi, A. Haj Ismail and Samer H. Zyoud, Crystals 2020, 10, 703; doi:10.3390/cryst10080703.
 - 9- **Irradiation induced elongation of Fe nanoparticles embedded in silica films**, Authors: E. A. Dawi, T. Ommar, R. Ackermann and A.A. Karar, International Journal of smart and Nanomaterials, Vol. 11, No. 2, 147–158, doi.org/10.1080/19475411.2020.1775157.
 - 10- **The Earth's magnetic field and azimuth variations of the electromagnetic component of cosmic air showers at ground level**, Authors: A. Haj Ismail, E.A. Dawi, A. AbdElKader, Journal of advanced Research in dynamical and control systems, Volume 12, 08-Special Issue, 524-529 (2020), DOI: 10.5373/JARDCS/V12SP8/20202551.
 - 11- **Sputtering of size-tunable oxidized Fe nanoparticles by gas flow method**, Authors: Dawi, E.A. Dawi, A.H. Ismail, A. AbdelKader, A. A. Karar, Appl. Phys. A 126, 316, (2020).
 - 12- **Anisotropic deformation of NiO nanoparticles embedded in silica under swift heavy ion irradiation**, Authors: E.A. Dawi, A.A. Karar and F.H.P.M. Habraken, Nanotechnology 30, 285603, (2019).
 - 13- **Assembly and Optical Properties of Metal Nanoparticles**, Authors: E.A. Dawi and A. AbdElKader, Solid State Phenomena, Vol. 294, pp. 3-10, (2019).
 - 14- **Evolution of a Defect in a 2D Wet Foam**, Authors: A. AbdElKader and E.A. Dawi, International Journal of Recent Technology and Engineering (IJRTE), ISSN: 2277-3878, Volume-7, Issue-6S, (2019).
 - 15- **Ion-Nanoscale Matter Interactions, book chapter (2) by E.A. Dawi, book title: Ion Beam Applications**, Editors: Ishaq Ahmad and Malek Maaza; Multiple authors: DOI: 10.5772/IntechOpen, 76862.
 - 16- **Optical microscopy of Au nanoparticle arrays fabricated by Nano-sphere lithography (NSL) under swift heavy ion beam irradiation**, Authors: E.A. Dawi and F.H.P.M. Habraken, International Journal of Scientific & Engineering Research Volume 8, Issue 12, ISSN 2229-5518, (2017).
 - 17- **Shaping of Au nanoparticles embedded in various layered structures by swift heavy ion beam irradiation**, Authors: E.A. Dawi, W.M. ArnoldBik, R. Ackermann, F.H.P.M. Habraken, Nuclear Instrumentation and Methods B (NIMB), Volume 384, 86-92, (2016).
 - 18- **Plasmonic Properties of Ion-shaped Nanoparticles**, Authors: G. Rizza, E.A. Dawi, A. M. Vredenberg, I. Monnet and M. Toulemonde, Progress in Electromagnetics Research, (2015).
 - 19- **Rational description of the ion-beam shaping mechanism**, Authors: G. Rizza, P. E. Coulon, V. Khomenkov, C. Dufour, I. Monnet, M. Toulemonde, S. Perruchas, T. Gacoin, D. Mailly, X. Lafosse, C. Ulysse, and E. A. Dawi, Phys. Rev. B 86, 035450, (2012).
 - 20- **Ion-induced elongation of gold nanoparticles in silica by irradiation with Ag and Cu swift heavy ions: track radius and energy loss threshold**, Authors: E.A. Dawi, G. Rizza, A. M. Vredenberg, and M. Toulemonde, Nanotechnology 22 215607, (2011).
 - 21- **Ion beam shaping of Au nanoparticles prepared by micellar technique** Authors: E.A. Dawi, A. Klimmer, G. Rizza, P. Ziemann, Nucl. Instr. and Methods in Phys. Res. B 268, 481–484, (2010).
 - 22- **Ion beam shaping of Au nanoparticles in silica: Particle size and concentration dependence**, Authors: E. A. Dawi, G. Rizza, M. P. Mink, A. M. Vredenberg and F. H. P. M. Habraken, Journ. Appl. Phys. 105, 074305, (2009).
 - 23- **Ion engineering of embedded nanostructures: from spherical to faceted**

nanoparticles, Authors: G. Rizza, E. A. Dawi, A. M. Vredenberg, and I. Monnet, Appl. Phys. Lett. 95, 043105, (2009).

24- Shear- fetched fluctuations in 2D wet foam, Authors: A. AbdelKader and E.A. Dawi, Chinese Physics B, (2021).

Publication statistics during the past 5 years:

Number of Q1* (top %10) Journals	3
Number of Q1 (top %75) Journals	4
Number of Q2 (top %50) Journals	3
Number of Q3 (top %25) Journals	2