

Curriculum Vitae

5-2-2022

Prof.dr. Albert Polman

Scientific Group Leader

Program Leader, NWO Focus Group Light Management in New Photovoltaic Materials

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www.researcherid.com/rid/D-1490-2011



Personal details

Date of birth: April 21, 1961

Place of birth: Groningen, The Netherlands

Nationality: Dutch

Scientific education

1989 PhD Thesis: *Beam-induced phase transformations in silicon* (Utrecht University, advisors: F.W. Saris and W.C. Sinke)

1985 MSc Physics, Utrecht University (The Netherlands)

1981 BSc Physics, Utrecht University (The Netherlands)

Albert Polman is one of the early pioneers of the research area of nanophotonics, the study of light at the nanoscale. His research group focuses on the realization of nanoscale metamaterials with tailored optical properties that do not exist in nature. He designs and fabricates novel photovoltaic architectures with enhanced power conversion efficiency based on semiconductor and dielectric metasurfaces and optical metasurfaces that perform analog optical computing tasks. Polman's group developed angle-resolved cathodoluminescence microscopy, a novel super-resolution microscopy technique that creates images with 10 nanometer resolution. The instrument is brought on the market by the start-up Delmic BV that Polman co-founded.

Past positions

2017-2018 Visiting Research Fellow, University of New South Wales, Sydney (sabbatical leave)

2006-2013 Director, FOM Institute AMOLF

2005 Head, Center for Nanophotonics, FOM Institute AMOLF

2003-2004 Visiting associate, California Institute of Technology, USA (sabbatical leave)

1999-2004 Department Head, FOM Institute AMOLF

1996-2011 Professor of Nanophotonics, University of Utrecht

1996-present Tenured scientific group leader, FOM Institute AMOLF

1991-1996 Scientific project leader, FOM Institute AMOLF

1989-1991 Post-doctoral staff researcher, AT&T Bell Laboratories (Murray Hill, NJ, USA)

1985-1989 PhD researcher, FOM Institute AMOLF

Distinctions and awards

2019 Highly Cited Researcher (Web of Science, Clarivate Analytics)

2018 Highly Cited Researcher (Web of Science, Clarivate Analytics)

2017 Frew Fellow, Australian Academy of Sciences

2017 Highly Cited Researcher (Web of Science, Clarivate Analytics)

2017 SolarPower R&D Award (Angel Business Communications)

2017 Research into the Science of Light Prize, European Physical Society (EPS)

2016 ERC Advanced Investigator Grant

2016 Fellow, Optical Society of America (OSA)

2014 Physica Prize, Netherlands Physical Society (NNV)

2014 Innovation in Materials Characterization Award, Materials Research Society (MRS)

2014 Julius Springer Prize for Applied Physics

2012 ENI Renewable and Non-Conventional Energy Prize

2010 ERC Advanced Investigator Grant

2010 Fellow, Materials Research Society (MRS, USA)

2009 Member, Royal Netherlands Academy of Arts and Sciences (KNAW)

2008 Honorary Member, International Committee Ion Beam Modification of Materials (IBMM) conference

2007 Member, Royal Holland Society of Sciences and Humanities (Koninklijke Hollandsche Maatschappij der Wetenschappen)

Awards for group members:

2021 *Cum laude* PhD award (M. Solà Garcia)
2020 Premio Brovetto, Italian Physical Society (A. Cordaro)
2018 Business Angel Award (V. Neder)
2016 Rubicon Award NWO (J. van de Groep)
2015 *Cum laude* PhD award (J. van de Groep)
2014 Best PhD thesis in solar energy in The Netherlands (M.C. van Lare)
2012 FOM prize for best PhD thesis application chapter (E.J.R. Vesseur)
2012 MRS graduate student Gold Award (J. van de Groep)
2011 Shell award for the best master thesis in physics (J. van de Groep)
2009 *Cum laude* PhD award (E. Verhagen)
2010 FOM prize for best PhD thesis (E. Verhagen)
2010 FOM prize for best PhD thesis application chapter (E. Verhagen)
1996 *Cum laude* PhD award (G.N. van den Hoven)

Publications and presentations

>340 publications in refereed international journals; >37.000 citations; H-index: 93; >200 invited presentations at international conferences, of which many as plenary or keynote speaker.

PhDs, postdocs, undergraduate students supervised

Total supervised: 26 PhD students, 18 postdocs, 32 master's students.

Memberships/program directorships

2020-present Chair, steering committee, Duurzame MaterialenNL Groeifonds application consortium
2020-present Chair, management Team EU FET-Proactive consortium EBEAM
2019-present Member, Platform Materialen
2018-present Member, Strategic Advisory Board TNO Energy Transition
2017-present Chair, Steering Committee National SOLARLab initiative
2014-present Chair, NWO Theme Committee Materials Science
2014-present Chair, National Science Agenda (NWA) Materials Route
2012-present Chair, Stichting ter bevordering van de Atoom- en de Molecuulfysica
2014-2020 Chair, Member, Royal Netherlands Academy of Arts and Sciences (KNAW) section TNW new member selection committee

2016-2019 Member, International Advisory Board, Winton Renewable Energy Program, Cambridge University
2018 Member, Jury EPS Research into the science of light prize
2014-2018 Chair, Awards committee, Materials Research Society (MRS)
2010-2018 Member, Executive Board National Nano-initiative NanoNextNL (125 M€ national program)
2004-2017 Member, Program Committee Joint Solar Panel Industrial Partnership Program
2016 Chair, International Evaluation Panel, Faculty of Applied Physics, Delft University of Technology
2010-2016 Member, Young Energy Scientists Advisory Board of FOM
2015-2016 Member, Scientific Advisory Council Advanced Research Center for Nanolithography
2014-2015 Member, Program Committee, NanoCity National nanoscience and technology conference
2014-2015 Member, FOM Committee Evaluation Industrial Partnership Programs
2013-2014 Member, KNAW committee National policy for use of intellectual property
2008-2012 Member, Steering Committee Physics@FOM Veldhoven, yearly national physics conference
2004-2013 Member, Steering Committee FOM-Philips IPP Program *Improved solid state light sources*
2002-2010 Program director, Flagship *Nanophotonics*, Dutch Nanotechnology Program NANONED
2005-2008 Chair/Member, Nanophysics and Technology Advisory Board of FOM
1999-2008 Program director, National FOM research program *Photon physics in optical materials*
1998-2008 Secretary/Member, International Committee, Ion Beam Modification of Materials conference
2004-2005 Member, Board of Directors, Materials Research Society (Pittsburgh)

Journal editorships

2014-present Member, Editorial Advisory Board ACS Photonics (American Chemical Society)
2007-present Member, Editorial Advisory Board Nano Letters (American Chemical Society)
2014-2019 Member, Board of Reviewing Editors, Science (AAAS)

2012-2019	Member, Editorial Advisory Board <i>Advanced Optical Materials</i> (Wiley)
2014-2018	Member, Editorial Advisory Board <i>Applied Physics Reviews</i> (American Physical Society)
2000-2006	Member, Advisory Editorial Board of <i>Physica B</i> (Elsevier)
2000	Volume Organizer (co-editor), <i>MRS Bulletin</i>

Industrial collaborations/contracts

Polman is cofounder, shareholder and advisor of the start-up company Delmic BV founded in 2012.

2017-present	Shell, Exasun, Eternal Sun, Levitech and Tempres Systems: development of Si-based tandem solar cells
2005-present	ThermoFisher/FEI: time-resolved cathodoluminescence microscopy
2013-present	ASML: development of a roadmap for nanolithography for photovoltaics
2012-present	Delmic: development of angle- and time-resolved cathodoluminescence microscopy
2005-present	Philips Research: development of nanophotonic concepts for improved solid-state light sources
2005-present	Philips Research/SCIL Nanoimprint Solutions: development and application of large-area soft nanoimprint lithography; joint project on banknote security with DNB (Dutch Central Bank)
2017	Consultant, Lucros Investment
2005-2010	FEI Company: IPP program on focused ion beam nanofabrication; cathodoluminescence microscopy
1999-2001	Symmorphix: development and commercialization of erbium-doped planar optical amplifiers
1996-2000	AKZO-Nobel: development of polymer optical amplifiers
1995-2002	ST Microelectronics: development of silicon-based light sources
1991-1994	PTT/KPN: optical doping, development of planar optical amplifiers
1989-1991	AT&T Bell Laboratories: optical doping, integrated optics

Conference Organisation

2019	Co-chair, Workshop <i>Electron beam spectroscopy for nanophotonics</i> (Paris)
2017	Co-chair, Workshop <i>Electron beam spectroscopy for nanophotonics</i> (Barcelona)
2017	Co-chair, Summer School Nanophotonics, Amsterdam
2014	Co-chair, Workshop <i>Electron beam spectroscopy for nanophotonics</i> (Amsterdam)
2012	Co-chair, Symposium <i>Optical nanostructures and advanced materials for photovoltaics</i> (OSA, Eindhoven)
2006	Chair, First Gordon Research Conference <i>Plasmonics - optics at the nanoscale</i> (Keene, NH, USA)
2004	Co-organizer, Symposium <i>Nanophotonic materials</i> , European MRS (Strasbourg)
2003	Co-chair, MRS Spring Meeting (San Francisco, USA)
1998	Chair, 11 th International Conference on Ion Beam Modification of Materials (Amsterdam)
1997	Co-organiser, Symposium <i>Materials and devices for Si based opto-electronics</i> , MRS Spring Meeting (San Francisco, 1997)
1996	Co-organiser, Symposium <i>Rare earth doped semiconductors II</i> , MRS Spring Meeting (San Francisco, 1996)
1994	Co-organiser, Symposium <i>Film synthesis and growth using energetic beams</i> , MRS Fall Meeting (Boston, 1994)