Curriculum Vitae
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Prof.dr. Albert Polman
Scientific Group Leader
Program Leader, NWO Focus Group Light Management in New Photovoltaic Materials
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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, The Netherlands), 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
2023 NWO Team Science Award
2023 Member, Netherlands Academy of Engineering (NAE)
2021 ERC Advanced Investigator Grant
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 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
2011 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:
2023 Rubicon Award NWO (A. Cordaro)
2022 Rising Stars of Light Award (A. Cordaro)
2022 *Cum laude* PhD Award (A. Cordaro)
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
>350 publications in refereed international journals; nearly 40.000 citations (ISI); H-index: 97 (ISI); >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, 35 master's students.

Memberships/program directorships
2023 Chair, Executive Board National Growth Fund program "Circular, integrated high-efficiency solar panels" (898 M€ research, innovation and industrial development program, 312 M€ subsidy)
2023 Chair, International Evaluation Panel, Faculty of Science and Engineering, Groningen University
2022-present Member, Mission Innovation team Renewable Energy, Ministry EZK
2020-present Chair, Management Team EU Pathfinder consortium EBEAM
2019-present Member, Platform Materialen
2017-present Chair, Steering Committee National SOLARLab initiative
2012-present Chair, Stichting ter bevordering van de Atoom- en de Molecuulfysica
2014-2023 Chair, NWO Theme Committee Materials Science
2014-2023 Chair, National Science Agenda (NWA) Materials Route
2018-2023 Member, Strategic Advisory Board TNO Energy Transition
2022 Jury, Rising Stars of Light Award, faculty track, Light Science Appl. journal
2020-2021 Chair, steering committee "Duurzame MaterialenNL" National Growth Fund application consortium (total funding awarded for programs on circular plastics, batteries, sustainable steel 640 M€).
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 Advanced Optical Materials (Wiley)
2014-2018 Member, Editorial Advisory Board Applied Physics Reviews (American Physical Society)
2000-2006 Member, Advisory Editorial Board of Physica B (Elsevier)
2000 Volume Organizer (co-editor), MRS Bulletin

Industrial collaborations/contracts

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

2023-present ASML: cathodoluminescence tomography for semiconductor metrology
2022-present WiTec, SCIL Imprint Solutions: analog optical computing metasurfaces
2022-present HyET Solar, VDL-ETG, SALDnano, Delmic, Roland Berger: development of roll-to-roll fabricated perovskite tandem solar cells using environmentally friendly processes.
2022-present BASF, Shell, Exxon Mobil, Toyota, Delmic, DENSSolutions: development of sustainable chemical reactions using light-driven processes
2005-present ThermoFisher/FEI: development of time-resolved cathodoluminescence microscopy
2012-present Delmic: development of angle- and time-resolved cathodoluminescence microscopy
2005-present Philips Research/SCIL Nanoimprint Solutions: development and application of large-area soft nano-imprint lithography
2005-2022 Philips Research: development of nanophotonic concepts for improved solid-state light sources
2017-2023 Shell, Exasun, Eternal Sun, Levitech and Tempress Systems: development of Si-based tandem solar cells
2017 Consultant, Lucros Investment
2013 ASML: development of a roadmap for nanolithography for photovoltaics
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 *Electron beam spectroscopy for nanophotonics* (Paris)
2017 Co-chair, Workshop *Electron beam spectroscopy for nanophotonics* (Barcelona)
2017 Co-chair, Summer School Nanophotonics, Amsterdam
2014 Co-chair, Workshop *Electron beam spectroscopy for nanophotonics* (Amsterdam)
2012 Co-chair, Symposium *Optical nanostructures and advanced materials for photovoltaics* (OSA, Eindhoven)
2006 Chair, First Gordon Research Conference *Plasmonics - optics at the nanoscale* (Keene, NH, USA)
2004 Co-organizer, Symposium *Nanophotonic materials*, European MRS (Strasbourg)
2003 Co-chair, MRS Spring Meeting (San Francisco, USA)
1998 Chair, 11th International Conference on Ion Beam Modification of Materials (Amsterdam)
1997 Co-organiser, Symposium *Materials and devices for Si based opto-electronics*, MRS Spring Meeting (San Francisco, 1997)
1996 Co-organiser, Symposium *Rare earth doped semiconductors II*, MRS Spring Meeting (San Francisco, 1996)
1994 Co-organiser, Symposium *Film synthesis and growth using energetic beams*, MRS Fall Meeting (Boston, 1994)