

Europass curriculum vitae

Personal information

Surname(s) / First name(s)

E-mail(s)

Nationality(-ies)

Gender

Van Sark, Wilfridus (Wilfried) Gerardus Johannes Hyacinthus Maria

w.g.j.h.m.vansark@uu.nl

Dutch

Male

Desired employment / Occupational field

Photovoltaics and energy system expert

Work experience

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

From September 2018 to present

Full Professor Integration of Photovoltaic Solar Energy

Research in the field of photovoltaics integration on buildings and the energy system at large, advanced solar forecasting techniques, local grid balancing linking with E-mobility, prosumption and (local) energy communities, energy systems monitoring and evaluation, environmental, market and policy analysis. Educational tasks: coordination of master track, research projects and PV technology course, tutoring of graduate and undergraduate students. Valorization of knowledge to (inter)national press.

Utrecht University, Copernicus Institute of Sustainable Development

Higher Education

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

From November 2002 to August 2018

Assistant Professor/Associate Professor

Research in the field of photovoltaic and wind energy systems monitoring and evaluation, solar cell and systems modeling, Life Cycle Analysis of photovoltaic systems, new solar cell concepts (3rd generation). Educational tasks such as coordination Master program Energy Science, and various master courses on PV and other energy conversion technologies, and tutoring of graduate and undergraduate students. Valorization of knowledge to (inter)national press.

Utrecht University, Copernicus Institute of Sustainable Development

Higher Education

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

From July 1999 to November 2002

Senior research scientist

Research in the field of fast fluorescent imaging and spectroscopy of semiconductor quantum dots, colloidal systems, and single molecules. Coupling them to molecules of biological interest. Lecturing and tutoring of graduate and undergraduate students.

Utrecht University, Debye Institute, Dept. Molecular Biophysics

Higher Education

Dates

Occupation or position held

Main activities and responsibilities

From October 1996 to July 1999

Assistant Professor

Research in the field of Epitaxial Lift-Off solar cells of III-V materials, III-nitrides for the development of blue-light emitting LEDs and laser diodes, ferroelectric oxides for micromechanical and optical

Name and address of employer
Type of business or sector

applications with focus on Metal Organic Chemical Vapour Deposition. Lecturing on courses Physics and Society, Materials Science, and tutoring of graduate and undergraduate students.
Nijmegen University, Research Institute for Materials, Dept. Experimental Solid State Physics III
Higher Education

Dates
Occupation or position held
Main activities and responsibilities

From December 1989 to October 1996
Postdoc researcher
Research in the field of amorphous silicon solar cells, solar cell modeling, Plasma Enhanced Chemical Vapour Deposition (PECVD) including Very High Frequency PECVD and mass spectrometric plasma analysis

Name and address of employer
Type of business or sector

Utrecht University, Debye Institute, Dept. Atomic and Interface Physics
Higher Education

Education and training

Dates
Title of qualification awarded
Principal subjects/Occupational skills covered
Name and type of organisation providing education and training

From June 1985 to November 1989
Ph.D. in Experimental Physics
Research on GaAs-based solar cells; modeling of the deposition process (Metal Organic Chemical Vapour Deposition); modeling of solar cells
Nijmegen University, Research Institute for Materials, Dept. Experimental Solid State Physics III

Dates
Title of qualification awarded
Principal subjects/Occupational skills covered
Name and type of organisation providing education and training

From September 1981 to June 1985
Master of Science (M.Sc.) in Experimental Physics
Research topic: simulation of solar cells, mass-spectrometric investigation of Chemical Vapour Deposition equipment, deposition of metal multilayers
Utrecht University, Faculty of Physics

Dates
Title of qualification awarded
Principal subjects/Occupational skills covered
Name and type of organisation providing education and training

From September 1977 to June 1981
Bachelor of Science (B.Sc.) in Experimental Physics
Physics and Mathematics, with specialty Chemistry
Utrecht University, Faculty of Physics

Personal skills and competences

Mother tongue(s)

Dutch

Other language(s)

Self-assessment

European level ()*

English

German

Italian

French

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C2	Proficient User	C2	Proficient User	C2	Proficient User	C2	Proficient User	C2	Proficient User
C1	Proficient User	C1	Proficient User	C1	Proficient User	C1	Proficient User	C1	Proficient User
B1	Independent User	B1	Independent User	B1	Independent User	B1	Independent User	B1	Independent User
A2	Basic User	A2	Basic User	A2	Basic User	A2	Basic User	A2	Basic User

() Common European Framework of Reference (CEF) level*

Organisational skills and competences

Work package leader in many EU projects (FP5, FP6, FP7, H2020, Horizon Europe), project leader in multiple nationally funded projects. Popularization of my work to (inter)national press contacts and secondary and primary school children. Participation and co-organization of public events with themes such as renewable energy and care for the environment. Awarded the 1993 Teyler Initiative" Prize for Environmental Knowledge Transfer.

Computer skills and competences

Large knowledge and experience with PCs, Mac, workstations, and mainframes (UNIX) Programming in C, Fortran, Pascal, Python; Data analysis and graphical representation with several packages (IDL, Origin), word processing (Word, Latex)

Additional information

References available on request.

List of selected publications (in past 5 years)

See also: <https://scholar.google.com/citations?hl=en&user=Q8jkMEAAAAAJ>

Books:

W. van Sark, B. Hoex, A. Reinders, P. Verlinden, N.J. Ekins-Daukes (Eds.), *Photovoltaic Solar Energy, From Fundamentals to Applications*, Volume 2, Wiley, 2024.

W.G.J.H.M. van Sark, V. Fthenakis (Eds.) *Photovoltaic Technology*, Volume 1 in T. Letcher (Ed.) *Comprehensive Renewable Energy 2nd Edition*, Elsevier, United Kingdom, 2022 (38 chapters, 800 pages).

Wilfried van Sark (Ed.), *PV System Design and Performance*, MDPI, Basel, Switzerland, 2019, 360pp.
([doi:10.3390/books978-3-03921-623-9](https://doi.org/10.3390/books978-3-03921-623-9))

A. Reinders, P. Verlinden, W. van Sark, A. Freundlich (Eds.), *Photovoltaic Solar Energy, From Fundamentals to Applications*, Wiley, 2017.

Selected scientific papers:

N.Y. Hendriks, K. Barhmi, L.R. Visser, T.A. de Bruin, M. Pó, A.A. Salah, W.G.J.H.M. van Sark, All sky imaging based short-term solar irradiance forecasting with Long Short-Term Memory networks, *Solar Energy* 272 (2024) 11246. ([doi:10.1016/j.solener.2024.112463](https://doi.org/10.1016/j.solener.2024.112463))

Abdulhadi Ayyad, Sara Mirbagheri-Golroodbari, Wilfried van Sark, Floating Offshore Photovoltaics across Geographies: an Enhanced Model of Water Cooling, *Energies* 17 (2024) 1131 ([doi:10.3390/en17051131](https://doi.org/10.3390/en17051131))

Basant Raj Paudyal, Sakthi Guhan Somasundaram, Atse Louwen, Angele H.M.E. Reinders, Wilfried G.J.H.M. van Sark, Dirk Stellbogen, Carolin Ulbrich, Anne Gerd Imenes, Analysis of spectral irradiance variation in northern Europe using average photon energy distributions, *Renewable Energy* 224 (2024) 120057. ([doi:10.1016/j.renene.2024.120057](https://doi.org/10.1016/j.renene.2024.120057))

Annick Ancil, Meghan N. Beattie, Christopher Case, Aditya Chaudhary, Benjamin D. Chrysler, Michael G. Debijs, Stephanie Essig, David K. Ferry, Vivian E. Ferry, Marina Freitag, Isaac Gould, Karin Hinzer, Harald Hoppe, Olle Inganäs, Lethy Krishnan Jagadamma, Min Hun Jee, Raymond K. Kostuk, Daniel Kirk, Stephan Kube, Minyoung Lim, Joseph M. Luther, Lorelle Mansfield, Michael McGehee, Duong Nguyen Minh, Preeti Nain, Matthew O. Reese, Angèle Reinders, Ifor D. W. Samuel, Wilfried van Sark, Hele Savin, Ian R. Sellers, Sean E. Shaheen, Zheng Tang, Fatima Toor, Ville Vähänissi, Ella Wassweiler, Emily L. Warren, Vincent R. Whiteside, Han Young Woo, Gang Xiong, and Xitong Zhu, Status report on emerging photovoltaics, *SPIE Journal of Photonics for Energy (JPE)* 13 (2023) 042301 ([10.1117/1.JPE.13.042301](https://doi.org/10.1117/1.JPE.13.042301))

Benjamin P. M. Laevens, Frank P. Pijpers, Harm Jan Boonstra, Wilfried G.J.H.M. van Sark, Olav ten Bosch, A Markov Chain Monte Carlo approach for the estimation of photovoltaic system parameters, *Solar Energy* 265 (2023) 112132. ([doi:10.1016/j.solener.2023.112132](https://doi.org/10.1016/j.solener.2023.112132))

Wilfried van Sark, Photovoltaics performance monitoring is essential in a 100% renewables-based society, *Joule* 7 (2023) 1388-1393 ([doi:10.1016/j.joule.2023.06.012](https://doi.org/10.1016/j.joule.2023.06.012))

Mathijs P.M. Tas, Wilfried G.J.H.M. van Sark, Experimental repair technique for glass defects of glass-glass photovoltaic modules – a techno-economic analysis, *Solar Energy Materials and Solar Cells* 257 (2023) 112397. ([doi:10.1016/j.solmat.2023.112397](https://doi.org/10.1016/j.solmat.2023.112397))

Thomas A. de Bruin, Wilfried G.J.H.M. van Sark, Numerical method for calculation of power conversion efficiency and colorimetrics of rectangular luminescent solar concentrators, *Solar RRL* 7 (2023) 202200787 ([doi:10.1002/solr.202200787](https://doi.org/10.1002/solr.202200787))

Odysseas Tsafarakis, Wilfried G.J.H.M. van Sark, A density-based time-series data analysis methodology for shadow detection in rooftop photovoltaic systems, *Progress in Photovoltaics, Research and Applications* 31 (2023) 506-523 ([doi:10.1002/pip.3654](https://doi.org/10.1002/pip.3654)).

- Nico Brinkel, Marle Zijlstra, Ronald van Bezu, Tim van Twuijver, Ioannis Lampropoulos, Wilfried van Sark, A Comparative Analysis of Charging Strategies for Battery Electric Buses in Wholesale Electricity and Ancillary Services Markets, *Transportation Research Part E: Logistics and Transportation Review* 172 (2023) 103085. ([doi:10.1016/j.tre.2023.103085](https://doi.org/10.1016/j.tre.2023.103085)).
- Lennard R. Visser, Boudewijn Elsinga, Tarek A. AlSkaif, Wilfried G.J.H.M. van Sark, *Open-source quality control algorithm and multi-year power generation data of 175 PV systems*, *Journal of Renewable and Sustainable Energy* 14 (2022) 043501 ([doi:10.1063/5.0100939](https://doi.org/10.1063/5.0100939)).
- Robin Quax, Marc Londo, Wijnand van Hooff, Taco Kuijers, Jaap Witte, Wilfried van Sark and Wim Sinke, *Assessment of spatial implications of photovoltaics deployment policies in the Netherlands*, *Solar Energy* 243 (2022) 381-392. ([doi:10.1016/j.solener.2022.07.048](https://doi.org/10.1016/j.solener.2022.07.048)).
- Dominik Keiner, Orlando Salcedo-Puerto, Ekaterina Immonen, Wilfried G.J.H.M. van Sark, Yoosuf Nizam, Fathmath Shadiya, Justine Duval, Timur Delahaye, Ashish Gulagi, Christian Breyer, *Powering an island energy system by offshore floating technologies towards 100% renewables: A case for the Maldives*, *Applied Energy* 308 (2022) 118360. ([doi:10.1016/j.apenergy.2021.118360](https://doi.org/10.1016/j.apenergy.2021.118360)).
- L.R. Visser, E.M.B. Schuurmans, T.A. AlSkaif, W.G.J.H.M. van Sark, *Regulation strategies for mitigating voltage fluctuations induced by photovoltaic solar systems in an urban low voltage grid*, *International Journal of Electrical Power and Energy Systems* 137 (2022) 107695. ([doi:10.1016/j.ijepes.2021.107695](https://doi.org/10.1016/j.ijepes.2021.107695)).
- Tjebbe Vroon, Erik Teunissen, Marlon Drent, Simona Negro, Wilfried van Sark, *Escaping the Niche Market: An Innovation System Analysis of the Dutch Building Integrated Photovoltaics (BIPV) Sector*, *Renewable and Sustainable Energy Reviews* 155 (2022) 111912. ([doi:10.1016/j.rser.2021.111912](https://doi.org/10.1016/j.rser.2021.111912)).
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- Wilfried van Sark, Johannes Radl, Andreas Fleischhacker, Georg Lettner, Wouter Schram, Atse Louwen, Luz Alicia Aguilar, Maria Roos, Christian Grundner, Moira Jimeno, Dirk Hendricks, Johannes Vollmer, Pierre Bancourt, Riccardo Battisti, Karl Moosdorf, Hanna Kuittinen, Eduardo Roman, António Joyce, Gaëtan Masson, Gregory Neubourgh, Jose Donoso, Paula Santos, Christoph Winter, Nicole Diwald, Ulrich Winter, *Innovative self-consumption and aggregation concepts for PV Prosumers: results of the PV-Prosumers4Grid project*, *Proceedings of the 37th European Photovoltaic Solar Energy Conference* (Eds. N. Pearsall, R. Kenny, P. Helm), WIP-Renewable Energies, Munich, Germany, 2020, pp. 2005-2009. ([doi:10.4229/EUPVSEC20202020-7EP.1.4](https://doi.org/10.4229/EUPVSEC20202020-7EP.1.4)).
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- Tarek AlSkaif, Bart Holthuizen, Wouter Schram, Ioannis Lampropoulos, Wilfried van Sark, *A Blockchain-based Configuration for Balancing the Electricity Grid with Distributed Assets*, *World Electric Vehicle Journal* 12 (2020) 62 ([doi:10.3390/wevj11040062](https://doi.org/10.3390/wevj11040062)).
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- N.B.G. Brinkel, M.K. Gerritsma, T.A. AlSkaif, I. Lampropoulos, A.M. van Voorden, H.A. Fidler, W.G.J.H.M. van Sark, *Impact of rapid PV fluctuations on Power Quality in the Low-Voltage Grid and Mitigation Strategies using Electric Vehicles*, *International Journal of Electrical Power and Energy Systems* 118 (2020) 105741. ([doi:10.1016/j.ijepes.2019.105741](https://doi.org/10.1016/j.ijepes.2019.105741)).
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- S.Z. Mirbagheri Golroodbari, A.C. de Waal, W.G.J.H.M. van Sark, *Proof of concept for a novel and smart shade resilient photovoltaic module*, IET-Renewable Power Generation 13 (2019) 2184-2194. ([doi:10.1049/iet-rpg.2018.6127](https://doi.org/10.1049/iet-rpg.2018.6127))
- T. Terlouw, T. AlSkaif, C. Bauer, W. van Sark, *Optimal energy management in all-electric residential energy systems with heat and electricity storage*, Applied Energy 254 (2019) 113580. ([doi:10.1016/j.apenergy.2019.113580](https://doi.org/10.1016/j.apenergy.2019.113580))
- Odysseas Tsafarakis, Kostas Sinapis, Wilfried G. J. H. M. van Sark, *A Time-Series Data Analysis Methodology for Effective Monitoring of Partially Shaded Photovoltaic Systems*, Energies 12 (2019) 1722 ([doi:10.3390/en12091722](https://doi.org/10.3390/en12091722))
- W.G.J.H.M. van Sark, H.C. van der Velde, J.P. Coelingh, W.A.A.M. Bierbooms, *Do we really need rotor equivalent wind speed?*, Wind Energy 22 (2019) 745-763 ([doi:10.1002/we.2319](https://doi.org/10.1002/we.2319))
- Marte Gerritsma, Tarek AlSkaif, Wilfried van Sark, *Flexibility of electric vehicle demand: analysis of measured charging data and simulation for the future*, World Electric Vehicle Journal 10 (2019) 14 ([doi:10.3390/wevj10010014](https://doi.org/10.3390/wevj10010014))
- Panagiotis Moraitis, Gijs van Leeuwen, Wilfried van Sark, *Visual appearance of nanocrystal-based Luminescent Solar Concentrators*, Materials 12 (2019) 885. ([doi:10.3390/ma12060885](https://doi.org/10.3390/ma12060885))
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- Ioannis Lampropoulos, Tarek AlSkaif, Jelle Blom, Wilfried van Sark, *A Framework for the Provision of Flexibility Services at the Transmission and Distribution Levels through Aggregator Companies*, Sustainable Energy, Grids and Networks 17 (2019) 100187. ([doi:10.1016/j.segan.2018.100187](https://doi.org/10.1016/j.segan.2018.100187))
- G.B.M.A. Litjens, B.B. Kausika, E. Worrell, W.G.J.H.M. van Sark, *A spatio-temporal city-scale assessment of photovoltaic power integration scenarios*, Solar Energy 174 (2018) 1185-1197. ([doi:10.1016/j.solener.2018.09.055](https://doi.org/10.1016/j.solener.2018.09.055))
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