

CURRICULUM VITAE

Prof Armin Gerhard ABERLE, PhD

National University of Singapore
Department of Electrical & Computer Engineering
Solar Energy Research Institute of Singapore
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1. PERSONAL DETAILS

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Birth: 13 Dec 1960, Hausach, Germany

Citizenship: Germany

2. ACADEMIC QUALIFICATIONS

16 Jun 1999 **Habilitation degree in Physics** (Dr rer nat habil) from University Hanover, Germany

23 Jan 1992 **Dr rer nat degree in Physics** (PhD) from U Freiburg, Germany

18 Feb 1988 **Physicist degree** from U Freiburg

3. PRESENT POSITIONS/ROLES

- **Chief Executive Officer**, Solar Energy Research Institute of Singapore (SERIS), NUS (since 2012)
- **Professor** (tenured), Department of Electrical and Computer Engineering, NUS (since 2009)
- **Cluster Director, Next-Generation Industrial Solar Cells and Modules**, SERIS (since 2015)
- **Cluster Director, Novel PV Concepts**, SERIS (since 2012)
- **Editor/Editorial Board Member of scientific-technical journals:** Solar RRL (Wiley-VCH, since 2016); Progress in Photovoltaics (Wiley, since 2002).
- **Advisory Board/Committee Member:** International Advisory C'ttee, IPVF (Institut Photovoltaïque d'Ile-de-France) (since 2020); Advisory C'ttee, National Center for Photovoltaic Research and Education (NCPRE), Indian Institute of Technology (IIT) Bombay (since 2016); Executive Chairman of the Academic C'ttee, Asian Photovoltaic Industry Association (APVIA) (since 2016); International Advisory C'ttee, International Photovoltaic Science and Engineering Conference (PVSEC), Asia-Pacific (since 2014)

4. PREVIOUS APPOINTMENTS

2008-12 **Deputy CEO and Cluster Director Silicon Photovoltaics**, Solar Energy Research Institute of Singapore, NUS

2008-09 **Visiting Professor**, Department of Electrical & Computer Engineering, NUS

2003-08 **Deputy Director**, Australian Research Council Photovoltaics Centre of Excellence, University of New South Wales (UNSW), Sydney, Australia

1998-08 **Professor** (Senior Lecturer, then Associate Professor, then Full Professor; all tenured), School of Photovoltaic and Renewable Energy Engineering, UNSW

1998-08 **Group Leader**, Thin-Film Silicon Solar Cell Group, UNSW

2001-02 **Deputy Research Director and Head of Technology Development Department**, Pacific Solar Pty Ltd, Sydney (part-time secondment from UNSW)

2000-01 **Deputy Director**, Special Research Centre for Third-Generation Photovoltaics, UNSW

1998-02 **Director** (Assoc Director, then Director), PV Special Research Centre, UNSW

1994-98 **Head of Silicon PV Department**, Institute for Solar Energy Research (ISFH), Hamelin, Germany

1992-94 **Alexander von Humboldt Postdoctoral Fellow** (Feodor Lynen programme), PV Special Research Centre, UNSW

1988-91 **Research Scientist**, Fraunhofer Institute for Solar Energy Systems, Germany

1982-87 **Physics Student**, University of Freiburg

1980-82 **Professional Soldier**, German Army

5. AWARDS, PRIZES

- **2016: Hamakawa Award**, 26th International Photovoltaic Science and Engineering Conference (PVSEC-26), Singapore, Oct 2016
- **2016: Distinguished PV Scientist Award**, SNEC 10th (2016) International Photovoltaic Power Generation Conference, Shanghai, China, May 2016
- **2008: IAG Eureka Prize for Innovative Solutions to Climate Change** (awarded by the Australian Museum to School of Photovoltaic

and Renewable Energy Engineering, UNSW)

- **1999: Venia legendi (teaching authorization)** for physics, U Hanover
- **1992: Humboldt Fellowship** (Feodor Lynen programme), Alexander von Humboldt Foundation, Germany
- **1992: PhD degree in Physics** from U Freiburg with highest possible mark (*summa cum laude* - "with highest commendation")
- **1977: School Prize** from High School Hausach "for excellent performance across all subjects"

6. CONFERENCE ORGANISATION

- **Since 2011:** Member of the International Scientific Committee and Paper Review Expert of the European Photovoltaic Solar Energy Conference and Exhibition (EU PVSEC)
- **2021:** Chairman of the 15th Global Advanced PV Technology Conference, at SNEC 15th (2021) International Photovoltaic Power Generation and Smart Energy Conference & Exhibition, Shanghai, June 2021
- **2020:** Chairman of the 14th Global Advanced PV Technology Conference, at SNEC 14th (2020) International Photovoltaic Power Generation & Smart Energy Conference, Shanghai, Aug 2020
- **2019:** Chairman of the Scientific Conference, at SNEC 13th (2019) International Photovoltaic Power Generation & Smart Energy Conf., Shanghai, June 2019
- **2018:** Chairman of the SNEC 12th (2018) International Photovoltaic Power Generation and Smart Energy Conference, Shanghai, China, May 2018
- **2017:** Chairman of the PV Asia Scientific Conference 2017, Singapore, Oct 2017
- **2017:** Chairman of the SNEC 11th (2017) International Photovoltaic Power Generation Conference, Shanghai, China, April 2017
- **2016:** Chairman of the 26th International Photovoltaic Science and Engineering Conference (PVSEC-26), Singapore, Oct 2016
- **2016:** Chairman of the SNEC 10th (2016) International Photovoltaic Power Generation Conference, Shanghai, China, May 2016
- **2015:** Chairman of the PV Asia Scientific Conference 2015, Singapore, Oct 2015
- **2015:** Chairman of the SNEC 9th (2015) International Photovoltaic Power Generation Conference, Shanghai, China, April 2015
- **2014:** Chairman of Singapore-Japan Joint Workshop on Photovoltaics, Singapore, Dec 2014
- **2014:** Chairman of the PV Asia Scientific Conference 2014, Singapore, Oct 2014

- **2014:** Chairman of the SNEC 8th (2014) International Photovoltaic Power Generation Conference, Shanghai, China, May 2014
- **2014:** Member of the Technical Programme Committee, 6th World Conf. on Photovoltaic Energy Conversion, Kyoto, Japan, Nov 2014
- **2013:** Chairman of the PV Asia Pacific Conference 2013 (PVAP 2013), Singapore, Oct 2013
- **2013:** Chairman of the SNEC 7th (2013) International Photovoltaic Power Generation Conference, Shanghai, China, May 2013
- **2012:** Chairman of the PV Asia Pacific Conference 2012 (PVAP 2012), Singapore, Oct 2012
- **2011 - 2017:** Member of the Scientific Committee and Reviewer of the Intern'l Conference on Silicon Photovoltaics (SiliconPV)
- **2011:** Chairman of Symposium O (Photovoltaic Materials and Devices) of the International Conference on Materials for Advanced Technologies (ICMAT 2011), Singapore, June 2011
- **2011:** Member of the International Programme Committee and International Co-Chair of Area 4 (Crystalline Silicon Technologies) of the 37th IEEE Photovoltaic Specialists Conference, Seattle, USA, June 2011

7. MEMBERSHIP OF PROFESSIONAL SOCIETIES

- **Member,** German Physical Society

8. PRESENT RESEARCH INTERESTS

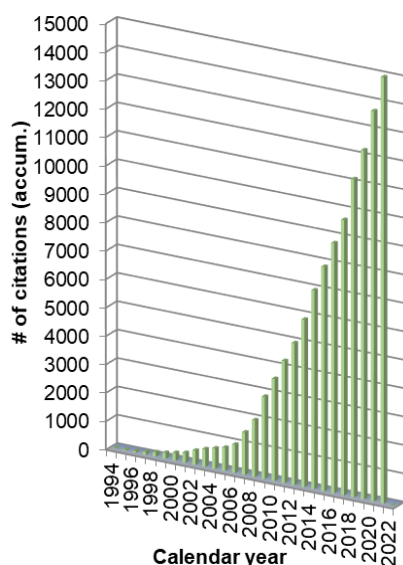
- Photovoltaic materials, devices and modules
- Crystalline silicon solar cells and modules
- Fabrication, characterisation and numerical modelling of silicon solar cells
- Development of characterisation methods and processing equipment for the PV community
- Physics of semiconductor devices

9. PUBLICATIONS / TALKS

- > 200 journal papers
- > 250 conference papers
- One book
- One edited book (Special Issue)
- Three book chapters
- **h-index:** 58 in Google Scholar, 47 in Scopus (Remark: Scopus does not consider journal papers published before 1996. It also does not consider books, conference papers or patents.)
- **Citations:** My publications have been cited over 15,000 times in the journals/publications/conferences covered by Google Scholar.* The

chronological evolution of these citations is shown in the graph below.

*(Source: Google Scholar, 23 Dec 2021)



Evolution of the number of citations of my publications.

10. TEACHING AT UNIVERSITIES

Since 2010: National University of Singapore:

- *Solar Cells and Modules*, Undergraduate module EE4438 (S2 in AY2020/21, S2 in AY2019/20, S2 in AY2018/19, S2 in AY2017/18, S2 in AY2016/17)
- *Devices for Electric Energy Generation*, Undergraduate module EE4432 (S2 in AY2012/13, S2 in AY2013/14, S2 in AY2014/15, S2 in AY2015/16)
- *Energy - How to return to sustainability?*, Freshman Seminar FME1205 (S2 in AY2009/10; S2 in AY2010/11)
- *Solar Photovoltaic Energy Systems*, EE4510 (S2 in AY2010/11)

1999-2007: The University of New South Wales, School of Electrical Engineering, School of Photovoltaic & Renewable Energy Engineering:

- *Applied Photovoltaics* (1999/S1, 2000/S1)
- *Electronics 1* (1999/S2)
- *High Efficiency Silicon Solar Cells* (2000/S1, 2003/S1, 2005/S1, 2007/S1)
- *Advanced Semiconductor Devices* (2003/S2, 2005/S2, 2007/S2)
- *Biomass* (2004/S1, 2006/S1)
- *Chemical Processes for Renewable Energy Systems* (2004/S2, 2006/S2)
- *Solar Cells and Systems* (2007/S2)

1994-1998: University of Hanover, Germany, Department of Physics:

- *Specific physical problems in solar energy utilization* (semester 94/95, 95/96, 96/97, 97/98)

11. OTHER ACTIVITIES

- **Applicant & Supervisor of research projects** funded by: Alexander von Humboldt Foundation (1992-94); German Federal Ministry for Education, Science, Research & Technology (1994-98); ASE GmbH (1994-98), Robert-Bosch GmbH (1997-98); European Union (1997-98); Netherlands Energy Research Foundation ECN (1997); Siemens Solar GmbH (1997); Australian Research Council (1999-08), National Research Foundation Singapore (since 2008)
- **Academic Supervisor** of undergraduate and postgraduate research students. As yet, I have supervised more than 130 research students (~30% undergrads, ~70% postgrads). Details on these students can be found in my "List of Publications"
- **Member of the Editorial Board of scientific-technical journals:** Progress in Photovoltaics (Wiley, since 2002); Advances in Opto-Electronics (Hindawi, 2006-2017); The Open Applied Physics Journal (Bentham, 2007-2013); Transactions on Electron Devices (IEEE, 2010-2018); Future Photovoltaics (Mazik Media, 2011-2012); Photovoltaics International (Solar Media, since 2014); Solar RRL (since 2016).
- **Consultant** for Phoenixcon GmbH (1994-97), ASE GmbH (1994-98), Siemens Solar (1996-98), Isofoton S.A. (1997-98), Pacific Solar Ltd (2001-02), Suntech Power (2006), Sustainable Power Solutions Pte Ltd (2007-08)
- **Reviewer** for major international scientific journals, including Physical Review B, Applied Physics Letters, Journal of Applied Physics, IEEE Transactions on Electron Devices, IEEE Journal of Photovoltaics, Progress in Photovoltaics, Solar Energy Materials and Solar Cells, Thin Solid Films
- **Reviewer** for the National University of Singapore, Australian Research Council, European Commission, Austrian Science Fund, Intern'l Solar Energy Society, University of New South Wales, Australian National University, King Saud University (Saudi Arabia), IEEE PV Specialists Conference
- **Chair**, Occupational Health & Safety Committee, School of Photovoltaic and Renewable Energy Engineering, UNSW (2004-06)