Chris G. Van de Walle

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EDUCATION

1986	**Ph.D., Electrical Engineering**, Stanford University, Stanford, California
1982	**Burgerlijk Elektrotechnisch Ingenieur**, Rijksuniversiteit Gent, Belgium

PROFESSIONAL EXPERIENCE

2004-	Professor, **Materials Department, University of California, Santa Barbara**
1991-2004	Principal Scientist/Senior Member/Member of Research Staff, **Xerox Palo Alto Research Center**, Palo Alto, California
1999	*Alexander von Humboldt US Senior Scientist* at the **Fritz-Haber-Institut** and the **Paul-Drude-Institut**, Berlin, Germany, May-October 1999
1988-1991	Senior Member of Research Staff, **Philips Laboratories**, Briarcliff Manor, New York; Joint-study agreement with IBM T. J. Watson Research Center
1991	Adjunct Professor, **Columbia University**, New York
1986-1988	Postdoctoral Scientist, **IBM Research Division**, T. J. Watson Research Center, Yorktown Heights, New York
1983-1986	Consultant, **Xerox Palo Alto Research Center**, Palo Alto, California
1983-1986	Research Assistant, **Stanford Electronics Laboratories**, Stanford, California
1983	Teaching Assistant, **Stanford University**, Stanford, California

HONORS

- **Fellow** of the American Association for the Advancement of Science, 2011
- **Fellow** of the Materials Research Society, 2010
- **Fellow** of the AVS, 2009
- **PARC Excellence Award**, 2003
- **David Adler Award**, American Physical Society, 2002
- **PARC Golden Acorn Award**, 2002
- **Humboldt Research Award for Senior US Scientist**, Alexander von Humboldt Foundation, Germany, 1998
- **Fellow** of the American Physical Society, 1997
- **Graduate Student Award** of the Materials Research Society, 1985
- **F. E. Terman Award**, Stanford University, Stanford, California, 1983
- **Fellow**, Belgian American Educational Foundation, 1982-1983
- **Prijs van de Stad Gent** (Prize of the City of Gent), Gent, Belgium, 1982

- **Plenary Lectures:**
  - International Conference on Defects in Semiconductors (ICDS-23, Japan), 2005
  - 2nd International Symposium on Hydrogen in Matter (Uppsala, Sweden), 2005
  - International Conference on SiC and Related Materials (ICSCRM, France), 2003
  - International Conference on Physics of Semiconductors (ICPS-25, Japan), 2000
  - International Conference on Defects in Semiconductors (ICDS-19, Portugal), 1997
  - Europhysical Conf. on Defects in Insulating Materials (EURODIM, Hungary), 2010
  - International Workshop on Nitride Semiconductors (IWN, Tampa, Florida), 2010

PROFESSIONAL ACTIVITIES

Conference chair:

- Co-Chair, CECAM Workshop on 'Which electronic structure method for the study of defects?', EPFL, Lausanne, June 8-10, 2009
- International Symposium on Materials Issues in Hydrogen Production and Storage, 2006
- Program Chair, 27th International Conference on the Physics of Semiconductors (ICPS), 2004
- Gordon Research Conference on Defects in Semiconductors, 1998
- 23rd Conference on Physics and Chemistry of Semiconductor Interfaces (PCSI), 1996
- 7th Trieste Semiconductor Symposium: Wide-Band-Gap Semiconductors, 1992

Program and Advisory Committees:

- Gordon Conference on Defects in Semiconductors, 2008, 2010
- International Conference on the Formation of Semiconductor Interfaces, 2009
- International Conference on Physics of Semiconductors (ICPS-29, Brazil), 2008
- International Symposium on Growth of III-Nitrides, 2008
- International Conference on Defects in Semiconductors, 1995, 1999-2003, 2003-07, 2007-11
- International Conference on II-VI Compounds, 1993, 1995, 2003
- International Workshop on Nitride Semiconductors, 2002, 2008
- International Workshop on Zinc Oxide, 2002, 2004, 2006
- International Symposium on Blue Laser and Light Emitting Diodes, 2000, 2002
- International Conference on Nitride Semiconductors, 2001, 2005
- International Workshop on Computational Electronics, 2001
- Conference on Semiconducting and Insulating Materials, 1998
- Electronic Materials Conference, 1995-1998
- International Conference on Computational Physics, 1997
- Conference on Physics and Chemistry of Semiconductor Interfaces, 1992-1996

Organizer of Focused Sessions for the APS Division of Materials Physics, 1992, 1994, 1997

Proceedings Editor: 20th International Conference on Defects in Semiconductors, 1999; 27th International Conference on the Physics of Semiconductors, 2004

PROFESSIONAL ACTIVITIES (CONT'D)

Member:

- APS (American Physical Society) – Fellow
- MRS (Materials Research Society) – Fellow
- AAAS (American Association for the Advancement of Science) – Fellow
- IEEE (Institute of Electrical and Electronics Engineers) – Senior Member
- AVS – The Science and Technology Society – Fellow

Referee/Reviewer:

- **Journals**: Annalen der Physik, Applied Physics A, Applied Physics Lett., Applied Surface Science, ChemPhysChem, Chemical Physics Lett., Chemistry of Materials, Computational Materials Science, Computer Physics Communications, Electrochemical and Solid State Letters, Europhysics Lett., IEEE J. of Quantum Electronics, IEEE Transactions on Electron Devices, International J. of Hydrogen Energy, Japanese J. of Applied Physics, J. of the American Ceramic Society, J. of the American Chemical Society, J. of Applied Physics, J. of Chemical Physics, J. of Chemical Theory and Computation, J. of Crystal Growth, J. of The Electrochemical Society, J. of Electronic Materials, J. of Luminescence, J. of Materials Research, J. of Physical Chemistry, J. of Physics and Chemistry of Solids, J. of Physics: Condensed Matter, J. of Physics D: Applied Physics, J. of Vacuum Science and Technology, Materials Chemistry and Physics, Microelectronics Reliability Journal, Modeling and Simulation in Materials Science and Engineering, Nano Lett., Nanotechnology, Nature, Nature Materials, New Journal of Physics, Optics Communications, Physica B, Physical Review B, Physical Review Lett., Physica Scripta, Physica Status Solidi, Semiconductor Science and Technology, Solid State Communications, Solid State Ionics, Surface Science
- **Funding agencies**: Army Research Office, Civilian Research and Development Foundation, Department of Energy, International Science Foundation, Italian National Institute for Materials Physics, National Science Foundation, Office of Naval Research, Petroleum Research Fund, Research Corporation, Research Grants Council (Hong Kong), Science and Engineering Research Council (Singapore), Swiss National Science Foundation

Contracts and grants: National Science Foundation, Department of Energy, Department of Education, Office of Naval Research, American Chemical Society, Semiconductor Research Corporation, Air Force Office of Scientific Research, University of California Energy Institute, Defense Advanced Research Projects Agency, Science Foundation Ireland, Research Corporation

Editorial and Advisory Boards, Committees, Review Panels:

- Editorial Board, Physical Review Letters, 1996-1999
- Executive Committee, APS Division of Materials Physics, 2002-2004
- Scientific Advisory Board, Paul Drude Institute, Berlin, Germany, 2002-2009
- Review Panel, NSF, Nanoscale Interdisciplinary Research Teams, 2001
- Solid State Sciences Committee, Board on Physics and Astronomy, National Academies, 2003-2006
- IUPAP C8 Commission on Semiconductors, Vice-chair, 2005-2008; Member, 2008-

RESEARCH INTERESTS

- Novel electronic materials; wide-band-gap semiconductors; oxides; spin centers for quantum computing.
- Physics and chemistry of hydrogen interactions with solids, liquids, and molecular systems. Hydrogen generation and storage.
- Computational physics. Density-functional theory, pseudopotentials. Atomic and electronic structure of crystalline, polycrystalline and amorphous materials, interfaces, surfaces, defects.
- Semiconductor heterojunctions and superlattices; effects of strain; deformation potentials. Metal-semiconductor interfaces, Schottky barriers.
- Defects and impurities in solids, doping, diffusion. Hyperfine parameters, vibrational modes.
- Device simulations; optical gain in laser structures; loss mechanisms in light emitters.

PUBLICATIONS AND PRESENTATIONS

Over 280 scientific publications. Publication list available on request.

22 U.S. patents; several patents pending.

125 Invited Presentations at International Conferences and Schools.
Numerous invited seminars at universities and industrial or government laboratories.

Web of Science [January 2011; search Author=((Vandewalle CG) or (Van de Walle CG))]: 225 articles, *h*-index: 59, 13,900 citations. 36 publications with over 100 citations.

January 2011