

Curriculum Vitae – Alan Gideon Werker, PhD PEng

I am an environmental engineer with 30 years of experience in both academic and industrial research and development efforts. For 14 years, I drove the devil in the detail from fundamental know-how to bioprocess development in piloting proof of concept of producing biopolymers from residuals management services. I led a trans-disciplinary team that peaked at 12 research engineers and scientists. We engaged in national and international academic, corporate, and public/private collaborations in basic research, thesis supervision, EU Consortium Projects, and, as well, practical business development challenges and networking for establishing bio-based value-added chains from renewable resources. Currently, I am a co-owner and consultant with Promiko AB (www.promiko.se), a Swedish SME, a research theme leader with Wetsus (www.wetusus.nl), and an Adjunct Professor, School of Chemical Engineering, at the University of Queensland. Efforts are in continuation to support communities and industries with fundamental as well as practical organic residuals management challenges and opportunities with bioprocesses, and, ideally, renewable resource generation.

Personal

Date of birth: November 7, 1961, Liverpool England
 Status: Married, one daughter
 Citizenship: Swedish, Canadian upbringing
 Languages: English (Mother Tongue), Swedish (Fluent), French and Dutch (Comprehension)
 Flow: Finding couplings of relationships and meaning in information
 Passions: Family, Cycling, Hiking, Sailing, Swimming, Paddling, Landscape Photography, Jazz
 Pet Peeves: Blocked standing on an escalator, wet socks
 Pleasures: A heartfelt smile, a good correlation, true collaboration
 Myers-Brigg: INTP (“The Thinker”)
 SDI: Green (“Analytic–Autonomous”)
 LinkedIn: <https://se.linkedin.com/in/alan-werker-a24b1742>
 References: Upon Request



Expertise/Interests/Experience Key Words

environmental engineering, wastewater treatment, microbiology, bioprocess design/control, biodegradation, microbial kinetics and population dynamics, activated sludge, MBBR/biofilm, contaminant fate, adsorption, surface tension, chemical analysis, chemometrics, experimental methods, computer and PLC programming, data processing, numerical methods, modelling, materials science, patents/patent strategy, thesis supervision, teaching, research management, connecting disparate dots.

Professional preparation, positions and appointments

Ph.D. degree: 1999 Environmental Engineering, University of British Columbia, Canada

Ph.D. thesis: The Effect of pH on Microbial Activity and Community Structure in the Biological Removal of Resin Acids from Wastewater

Base training: 1988 MEng (Mechanical Engineering), University of Toronto, Canada
 1985 BaSc (Mechanical Engineering), University of Waterloo, Canada

Present positions: Promiko AB, Sweden – Consultant and Co-owner.
 Wetusus, The Netherlands – Bioplastics Theme Leader.
 Adjunct Professor, 2014-present, Chem. Engineering, University of Queensland

Former positions: Research and Development Manager, 2005-2016,
 Veolia Water Technologies AB (AnoxKaldnes), Lund Sweden.
 Senior Research Scientist, 2003-2004, AnoxKaldnes AB, Lund, Sweden.
 Adjunct Assistant Professor, 2003-2005, University of Waterloo, Canada.
 Assistant Professor, 1999-2002, Environmental Engineering, Univ. of Waterloo.
 PhD Candidate, 1992-1998, Environmental Engineering, Univ. of British Columbia.

Materials Science Research Engineer, 1988-1992, SKF AB, The Netherlands.

Academic Work (Graduate and Undergraduate Teaching and Supervision)

Courses developed and taught at the University of Waterloo (1998-2002):

ENVE 330 - Environmental Sampling and Analysis; ENVE 431 – Environmental Engineering Design Projects; CIVE/ENVE 375 - Water Quality Engineering; CIVE/ENVE 472 - Wastewater Treatment; CIVE 670 - Water and Wastewater Treatment; CIVE 771 Biological Wastewater Treatment: Theory and Practice; CIVE 775 Principles of Ecological Engineering.

Guest Lecturer and Undergraduate Project Supervisor, Lunds Universitet, 2007-2008

Plenary Lecturer: IWA Resource Recovery, Ghent 2015, ISBP, Cairnes 2012

Graduate thesis supervision/co-supervision/contributions since 1999: 7 PhD, 20 Masters

Selected Peer Reviewed Research Contributions Coupled to PhD and Masters Thesis Supervision as Well as Hands on Fundamental R&D (of 73)

Wang, Bengtsson, Oehmen, Carvalho, Werker, Reis. 2019. Application of dissolved oxygen level (DO) control for PHA accumulation with concurrent nitrification in surplus municipal activated sludge. *N. Biotechnol.* 50, 37–43. <https://doi.org/10.1016/j.nbt.2019.01.003>

Chan, Pratt, Halley, Richardson, Werker, Laycock, Vandl. 2019. Mechanical and physical stability of polyhydroxyalkanoate (PHA)-based wood plastic composites (WPCs) under natural weathering. *Polym. Test.* 73, 214–221. <https://doi.org/10.1016/j.polymertesting.2018.11.028>

Simon Bengtsson, Anton Karlsson, Tomas Alexandersson, Luca Quadri, Markus Hjort, Peter Johansson, Fernando Morgan-Sagastume, Simon Anterrieu, Monica Arcos-Hernandez, Lamija Karabegovic, Per Magnusson, Alan Werker: *A process for polyhydroxyalkanoate (PHA) production from municipal wastewater treatment with biological carbon and nitrogen removal demonstrated at pilot-scale.* *New Biotechnology* 11/2016; DOI:10.1016/j.nbt.2016.11.005

Om Murugan Janarthanan, Bronwyn Laycock, Liliana Montano-Herrera, Yang Lu, Monica V Arcos-Hernandez, Alan Werker, Steven Pratt: *Fluxes in PHA-storing microbial communities during enrichment and biopolymer accumulation processes.* *New Biotechnology* 08/2015; 33(1). DOI:10.1016/j.nbt.2015.07.007

Francesco Valentino, Lamija Karabegovic, Mauro Majone, Fernando Morgan-Sagastume, Alan Werker: *Polyhydroxyalkanoate (PHA) storage within a mixed-culture biomass with simultaneous growth as a function of accumulation substrate nitrogen and phosphorus levels.* *Water Research* 03/2015; 77:49-63. DOI:10.1016/j.watres.2015.03.016

Selected Patent and Patent Pending Applications (of 12)

Alan G Werker, Peter Johansson, Per Magnusson: *Process for the extraction of polyhydroxyalkanoates from biomass.* Ref. No: US2015368393, Year: 12/2014

Alan Gideon Werker, Peter Stig Tomas Johansson, Per Olof Gosta Magnusson, Franciscus Hubertus Jacobus Maurer, Patric Jannasch: *Method for Recovery of Stabilized Polyhydroxyalkanoates from Biomass that has been used to Treat Organic Waste.* Ref. No: US20130203954A1, CA2807771A1, CN103201311A, EP2606080A1, WO2012022998A1, Year: 08/2010

Alan Gideon Werker, Simon Olof Harald Bengtsson, Carl Anton Börje Karlsson: *Method for Accumulation of Polyhydroxyalkanoates in Biomass with On-Line Monitoring for Feed Rate Control and Process Termination.* Ref. No: US20130029388A1, CA2783591A1, CN102770549A, EP2510103A2, WO2011070544A2, WO2011070544A3, Year: 12/2009

For publication activity and contribution details please see

ResearchGate - https://www.researchgate.net/profile/Alan_Werker

Google Scholar - <https://scholar.google.com/citations?user=nswI-1MAAAAJ&hl=en>

12 Patents/Patent Pending, 73 Research Articles, 10 Conference Proceedings, 6 Book/Chapters/Reports.

Google Scholar Citations (accessed March, 2019) – H-index 24 (all), 21 (Since 2014).

Scopus Citations (accessed March, 2019) - Citations 1690; H-index 21.