



Curriculum Vitae, Hans Elwing Professor emeritus (Mars 2018)

Personal: Born 460724. Married, one child and one grandchild. Residence in Göteborg.
Ph.D. in Medical Microbiology 1980. University of Gothenburg. Email: hans.elwing@cmb.gu.se

Research interest: My/our research has been focussed on interdisciplinary approaches in surface Chemistry. Key words are *Protein adsorption*, *Surface modifications*, Biomaterials (studies on blood compatibility) and *Marine Biofouling*; introduction of new approaches to inhibit barnacle colonization at marine coatings.

Education and Appointments

2013- Onwards. Senior Professor (P. emeritus), University of Gothenburg
1995- 2013 Full Professor in Interface Biophysics, University of Gothenburg (95-13)
1994-1995 Full professor in Interface Biology, Linköping Institute of Technology, Sweden
1983-1994 Assistant professor at the below laboratory 83-90
1980-1983 Research assistant at the Laboratory of Applied Physics. Linköping University. 80-83
1980 Ph.D. in Medical Microbiology, University of Gothenburg, Sweden.
1975 Master of Science; Subjects: Botany, Zoology, Zoophysiology, Biochemistry

Ph.D. students

I have been main supervisor (and in most cases also examiner) of 19 Ph.D. students:

Maude Wikström "Thin layer immunoassay" (1983) University of Gothenburg

Gunnar Hörnsten "The use of metal-oxide semiconductor sensors for determination of H₂ and NH₃ in cultures of E. coli" (1988) Linköping University

Pentti Tengvall "Titanium – Hydrogen peroxide interaction with reference to biomaterial applications" (1989) Linköping University

Stefan Welin "Ellipsometry and wettability gradient surfaces" (1992) Linköping University

Bo Lassen "RF-plasma polymers for biocompatibility research" (1995) Linköping University

Liu Li "Complement activation on solid surfaces" (1997) Linköping University

Peter Billsten "Spectroscopic investigations of conformational changes of proteins adsorbed to solid surfaces (1997) Linköping University

Ghada Nimeri "Neutrophil biology on artificial surfaces (1998) University of Gothenburg

Camilla Fant "Studies of crosslinking and Protein-protein interactions of adhesions from blue mussel" (2002) University of Gothenburg

Mia Dahlstrom. Pharmacological agents targeted against barnacle as lead molecules in new antifouling technologies. (2004) University of Gothenburg (2004)

Anders Sellborn "Cascade reactions of blood at model biomaterial surfaces" (2004) University of Gothenburg

Anki Olofsson “Biofilms, formation and prevention” (2005). University of Gothenburg

Marcus Andersson “Molecular basis of inflammation caused by biomaterial” University of Gothenburg

Julia Hedlund (Lic thesis 2006) “Cross-linking of thin layers of *Mytilus edulis* foot protein 1 (Mefp1), University of Gothenburg

Anders Lundgren, “Self-Organization of Nanoparticles” (2012) University of Gothenburg

Mats Hulander “Attenuation of acute inflammatory responses by surface Nano topography” (2012) University of Gothenburg

Emiliano Pinori “Low biocide emission antifouling based on a novel route of barnacle intoxication” (2013) University of Gothenburg .

Anders Lundvik “Characterization of Aminoacid tRNA Ligases using the Analytical Ultracentrifuge” (2015), University of Gothenburg

Postdocs and associate professors associated with my lab:

Mattias Berglin, Elaine Vandenberg, Fredrik Höök, Christian Pansch and Yi Yang and some others

Networks in Industry and Academia. I have initiated and participated in many industry oriented framework research programmes and I have had many Industrial PhD students. Important industrial collaborations involve ENTIFIC, BIOSCIENCE PRODUCT AB, I-TECH AB, BACTIGUARD AB, Stockholm BIM KEMI AB, Q-Sense AB (Now Biolin), VOLVO PENTA, RISE Institute in , Borås, Sweden, HEAB AB, I have also various commissions in scientific advisory board in different companies. Member of editorial board of Colloids and Surfaces, B. Referee commissions from about 20 Scientific Journals including Nature, Science JACS, Langmuir, Biomacromolecules and Biomaterial Journals. Evaluation of professors chairs (five times), Faculty thesis evaluation: about 40 times.

Entrepreneurial achievements. I am the founder of four companies: I-Tech AB, Civo AB, Cline Scientific AB and HEAB AB. Owner of several patents. One of the patents about marine antifouling has now developed to a commercial product (Selectope.com)

Research interest: My research has been focussed on interdisciplinary approaches in surface Chemistry and research attitude has been engineering science. One main focus has been to combine biology and biochemistry with methods in surface chemistry and Physics. Some highlights are:

Development of the wettability gradient technology. I described a method of making wettability gradients at solid surfaces. This methodology opened up a possibility of making investigations with wettability as continuous parameter. This innovation opened up a whole field of investigation and I have been much cited for this pioneer achievement.

Surface plasmon resonance (SPR) I was one of the first researcher that visualised antigen-antibody reactions by means of surface sensitive optical methods such as ellipsometry and surface plasmon resonance. The collaborations with I Lundström and B Liedberg in Linköping and Pharmacia-Biosensor (Uppsala) resulted in the development of the Biacore instrument, which become a market star.

Quartz Chrystal microbalance (QCM-D). I was active in finding new application areas of this method, developed at Chalmers University of Technology.

Development of Marine Technology in Göteborg. From 1995 I have had a professors chair at the University of Göteborg. My/Our research activities have been focussed on: Marine adhesives and its use as biomaterials and other biotechnical applications. Another focus has been the development of a new generation of low toxic marine paint. In this area I am the main inventor of a new patents. I have also founded a new company I-Tech that is the main commercial vector in a former Research programme called Marine Paint. Nearly 80 mill SEK has been granted to Marine Biotechnology research from SSF (Mastec) and MISTRA (Marine paint) since 1996.

I have been one of the main actors in those programmes as inventor and senior Scientists.

Funding. I have had the rare privilege of receiving my own salary from internal grants through my hole carrier. I also have had grants from several federal agencies, but the main funding's for PhD students has been from various industries.

Publications

I have published a total of 160 papers (1979 – 2017) in refereed Journals. My H-index is 44 and I have been cited 7748 times (according to Google Scholar, April 2018) A list of publications can be found at <https://scholar.google.se/citations?user=LIPPXm8AAAAJ&hl=sv>