

3. Education

MSc E. Eng, 1987 *Tampere University of Technology, with honours*
Digital- and Computer technology
“Personal image processing workstation”
(Dr. Jouko Viitanen, Prof. Yrjö Neuvo)

PhD, 1996 *University of Turku, Faculty of Medicine*
“New Techniques in Confocal Microscopy”,
Supervised by prof. Erkki Soini and Dr. Stefan Hell (Nobel 2014)

Title of Docent (Adj. Prof.), 2001 (Biophysics)
Institute of Biomedicine, Faculty of Medicine
University of Turku

Other training in e.g. Academic leadership and academic working life (several courses organized by University of Turku during 2002-2016/prof. Soili Keskinen)

5. Language skills:

Mother tongue: *Finnish*

Official language examinations:
Official language examination in oral and written Swedish
As required by law. Part of MSc degree in E. Eng 12.6 1987

Further language skills: *English, written and oral*
German, written and oral

6. Current position:

Professor, Medical Physics and Engineering, Institute of Biomedicine, University of Turku 1.6 2005 –
Member of the board, Advisor, Aqsens Oy 1.5 2009 –
Member of the board, Advisor, Aqsens Health Oy 1.5. 2017-
Chairman of the board, Paavo Nurmi Center, 1.1.2011 -
Vice Dean, Faculty of Medicine 1.8 2016 –

7. Previous professional appointments:

University of Turku
Vice Dean, Faculty of Medicine: 1.6 2007 – 31.7 2012

Academy of Finland
Academy Senior Research Fellow 1.12 2005 – 31.11 2006

University of Turku
Director of Research, Medical Physics and Engineering, 1.8 2004 – 31.5 2005

University of Turku:
Professor, Medical Physics and Engineering (acting) 1.8 2002 – 31.7 2004

Academy of Finland:
Academy Researcher 1.8 2001 – 31.7 2002

University of Turku, Faculty of Medicine, Institute of Biomedicine, Medical Physics and Chemistry:
Researcher 1.1 1994 – 31.12 1995
Assistant 15.1 1996 – 31.12 1997

Post-doctoral fellow 1.1 1998 – 31.5 2001

University of Turku, Center for Biotechnology:
Researcher 1.9. 1992 – 31.12. 1993

European Molecular Biology Laboratory (EMBL), Confocal microscopy group:
Researcher 1.9 1988- 31. 8. 1992

Tampere University of Technology, Research Institute in Computer Sciences and Information Technology:
Research assistant and researcher 1.1. 1986 – 31.8. 1988

8. Funding, supervision of research and academic leadership

Research funding

Numerous major academic and industrial projects as group leader since mid 1990's with total sum approaching 10 M€. Funding from Academy of Finland, Industry, EU-framework programmes, ERC, TEKES, different Foundations and Graduate schools.

Funding, past five years:

EU FP7: NANOGNOSTICS, Quantum Dot-Based Highly Sensitive Immunoassays for Multiplexed Diagnostics of Alzheimer's Disease, 480 000€ (until 12/2013)

EPOC: Early Intervention Oral Cancer Screening Project – 181 000€, (until 03/2015)

Finnish cultural foundation, personal sabattical grant – 25 000€ (2013)

MBEprint: Academy of Finland, 1 131 000€ (2014-2018)

Supervision of Research

Post-doctoral researchers: *Dr. Juhani Soini 2002-2004, Dr. Harri Härmä 2005 -2014, Dr. Sari Pihlasalo 2011-2014, Dr. Qi Wang 2011-2013, Dr. Anita Rozwandowicz-Janssen 2008-2012, 2015-, Dr. Shweta 2009-2011, Dr. Sami Koho 2016-*

PhD theses supervised (official supervisor), co-supervised (main supervisor in parenthesis):

Dr. Juhani Soini, 2002, main sup.

Dr. Niko Meltola, 2005, co-sup. (prof. Erkki Soini)

Dr. Sari Pihlasalo, 2011, co-sup. (Dr. Harri Härmä)

Dr. Roope Huttunen, 2012, co-sup. (Dr. Juhani Soini)

Dr. Teppo Stenholm, 2012, co-sup. (Dr. Pirkko Kotilainen)

Dr. Pilvi Ylander, 2012, main sup.

Dr. Tuomas Näreoja 2014, co-sup. (Dr. Harri Härmä)

Dr. Kari Kopra 2015, co-sup. (Dr. Harri Härmä)

Dr. Takahiro Deguchi 2015, main sup.

Dr. Sami koho 2016, main sup.

Dr. Neeraj Prabhakar 2018, co-sup. (prof. Jessica Rosenholm)

Under supervision

MSc Janne Kulpakko (main)

MSc Elena Tcarenkova (main)

MSc Joonas Siivonen (main)

MSc Elnaz Fazeli (main)

Academic leadership

Group leader (post-doc) 1996-2002 (under prof. Erkki Soini)

Independent laboratory leader, Laboratory of Biophysics 2002 –

Chair of infrastructure, Institute of Biomedicine 2002-2012

Chair of reorganisation of the administrative services of Faculty of Medicine (“HATU-hanke”), 2011-2012

Chair of reorganisation of infrastructure services of the Faculty of Medicine (“LATU-hanke”), 2012-2013

Vice-Dean, Faculty of Medicine 2007-2012

Vice-Dean, Faculty of Medicine 2016-

9. Teaching activities and experience

Physics lectures for students of Medicine and Health Biosciences: 1995-2002 Radiation protection for Medical students: 2005-

International Masters Program in Biomedical Imaging, Chair: 2009-

- Initiation and planning of the whole program (chair at University of Turku)

- Planning and implementation of yearly course programs in:

 Biomedical Instrumentation (lecture & laboratory)

 Fluorescence in Bioanalytical research

 Physical Basis of Medical imaging (including laboratory course)

 Laboratory internship

Several post-graduate courses in Biomedical imaging (microscopy), Bio-sensing and Fluorescence

Lectures at “Business Essentials for Scientists”, several lectures under the subject “Science to Business”.

11. Other academic activities

Evaluation of PhD theses - reviewer:4 , opponent:3

Evaluation of scientific qualifications: 5

International evaluations of funding applications: 10 (ESF, LaserLab Europe)

Memberships in academic societies:

Member of the Finnish Optical Society (FOS)

Vice-chairman 2007 - 2008

Chairman 2008 -2010

Board Member 2004 – 2011

Scientific advisory board chairman (2014-2016, Photonics Finland)

Board Member 2016- (Photonics Finland)

Member of the Finnish Society of Medical Physics and Medical Engineering

Board member of the society 2003 ->

Treasurer of the society 2005 – 2011

Editorial duties:

Member of Editorial Board: Bioanalytical Reviews (Springer)

Member of the Editorial Advisory Board, Analytical Chemistry (ACS) 2013-2015

Continuous and numerous referee duties for international journals.

12. Scientific and Societal impact of research

Google scholar 28.9 2018: h-index 28, i-10 index 63, number of publications indexed 150

Most cited:

<input type="checkbox"/>	TITLE	CITED BY	YEAR
<input type="checkbox"/>	Two-photon excitation 4Pi confocal microscope: enhanced axial resolution microscope for biological research PE Hänninen, SW Hell, J Salo, E Soini, C Cremer Applied physics letters 66 (13), 1698-1700	131	1995
<input type="checkbox"/>	Lanthanide luminescence: photophysical, analytical and biological aspects P Hänninen, H Härmä Springer Science & Business Media	104	2011
<input type="checkbox"/>	Method for the excitation of dyes P Hänninen, E Soini US Patent 5,523,573	96	1996
<input type="checkbox"/>	A new microvolume technique for bioaffinity assays using two-photon excitation P Hänninen, A Soini, N Meltola, J Soini, J Soukka, E Soini Nature Biotechnology 18 (5), 548	85	2000
<input type="checkbox"/>	Continuous wave excitation two-photon fluorescence microscopy PE Hänninen, E Soini, SW Hell Journal of microscopy 176 (3), 222-225	79	1994
<input type="checkbox"/>	Ultrasonic enrichment of microspheres for ultrasensitive biomedical analysis in confocal laser-scanning fluorescence detection M Wiklund, J Toivonen, M Tirri, P Hänninen, HM Hertz Journal of applied physics 96 (2), 1242-1248	77	2004
<input type="checkbox"/>	Core-shell designs of photoluminescent nanodiamonds with porous silica coatings for bioimaging and drug delivery II: application N Prabhakar, T Näreöja, E von Haartman, DŞ Karaman, H Jiang, S Koho, ... Nanoscale 5 (9), 3713-3722	75	2013
<input type="checkbox"/>	Luminescence-scanning microscopy process and a luminescence scanning microscope utilizing picosecond or greater pulse lasers P Hänninen, S Hell US Patent 5,777,732	74	1998
<input type="checkbox"/>	Annular aperture two-photon excitation microscopy SW Hell, PE Hänninen, A Kuusisto, M Schrader, E Soini Optics communications 117 (1-2), 20-24	67	1995
<input type="checkbox"/>	Fluorescent nanoparticles as labels for immunometric assay of C-reactive protein using two-photon excitation assay technology JO Koskinen, J Vaarno, NJ Meltola, JT Soini, PE Hänninen, J Luotola, ... Analytical biochemistry 328 (2), 210-218	63	2004
<input type="checkbox"/>	Method and a device for monitoring nucleic acid amplification reactions P Hänninen, E Soini US Patent 6,310,354	61	2001
<input type="checkbox"/>	Biospecific assay method E Soini, P Hänninen US Patent 6,204,068	59	2001
<input type="checkbox"/>	Refractive-index-induced aberrations in two-photon confocal fluorescence microscopy H Jacobsen, P Hänninen, E Soini, SW Hell Journal of Microscopy 176 (3), 226-230	54	1994

Transfer of science to practice:

Leica Microsystems: 1997 - 2010

Leica Microsystems commercialized and produced two-photon microscopy that based on the findings of applicant and Nobel Laureate Stefan Hell

Arctic Diagnostics Oy (co-owner and boardmember until 2005): 1995 ->

*Arctic Diagnostics International has developed and markets near-patient analysis system for microbial infections basing on the innovations first published in 2000 (Hänninen et. al: Nature Biotechnology 2000)
Frost & Sullivan European Respiratory Infection Disease Point of Care Product Leadership Award 2014 (recipient Arctic Diagnostics International).*

Aqsens Oy (co-founder, board-member, co-owner and advisor): 2009 ->

*Aqsens Oy commercialises fingerprinting technology for industrial (process-control and monitoring) applications. (Hänninen et. al: JACS 2013)
"WORLD'S FIRST IN-FIELD, FAST RESIDUAL SI MONITORING SYSTEM" – product launch May 2014. Product line sale to Kemira OYJ in May 2017*

Aqsens Health Oy, spin-off of the previous in April 2017

*Early oral cancer screening proof-of-principle project startup
India/Bangalore; jointly with BIOCON/Bangalore with support from Finnfund
and DBT/India.*