

CURRICULUM VITAE

Esko I. Kauppinen, PhD (Physics), Professor



PERSONAL INFORMATION

Family name	Kauppinen
Given names	Esko Ilmari
Date of birth	August 27, 1957
Place of birth	Sääminki, Finland

CURRENT POSITIONS

Professor, Helsinki University of Technology, Department of Engineering Physics and Mathematics
Manager, NanoMaterials Group, Helsinki University of Technology, Laboratory of Applied Physics
VTT Research Professor, Nanotechnology

EDUCATION

B.S., Department of Physics, University of Helsinki, Finland,	1982.
M.S., Department of Physics, University of Helsinki, Finland,	1985.
Lic. Phil., Department of Physics, University of Helsinki, Finland,	1988.
PhD., Department of Physics, University of Helsinki, Finland,	1992.

PREVIOUS ACADEMIC APPOINTMENTS

Visiting Professor, Tokyo University of Agriculture and Technology, Tokyo, Japan, October 2001.
ESF Nano Program Fellowship for Short Visit at EMAT, University of Antwerp, Antwerp, Belgium, June 28 - July 9, 1999.
Visiting Research Scientist, University of Florida, Gainesville, Florida, USA, 1987-1988.
Research Assistant, Department of Physics, University of Helsinki, Helsinki, Finland, 1982-1983.

PREVIOUS AND CURRENT NON-ACADEMIC POSITIONS AND APPOINTMENTS

Project Manager, TKK 100 Year Anniversary Research Program MIDE Project CNB-E (*Carbon NanoBuds for Energy Applications*). Funded by TKK for 1 880 000 € during 1.1.2008 - 31.12.2012.

Project Manager, EU FP6 STREP Project No 033350 *BNC Tubes (Novel, Heteroatomic Boron, Nitrogen and Carbon Nanotubes)*. Funded by EU for 2 500 000 €, total consortium funding 3 250 000 €, 2007-2010.

Project Manager, Research project “*Nanoparticle Emissions Simulator*”, TEKES/FINE Research Program, 2004-2005.

Project Manager, Generic Research project “*Control of Small Particle Surface Forces and Surface Oxidation*”, TEKES/PINTA Research Program, 2002-2006.

VTT Foreign Exchange Research Program Fellowship for period 30.9.-31.10.2001 at Tokyo University of Agriculture and Technology (TUAT), Tokyo, Japan for the theme of research “*Surface Force Control of Nanostructured Fine Particles*”.

JITA/AIST/MITI Invitation Program Fellowship for Foreign Researchers for period September 23 – October 22, 2000 at Mechanical Engineering Laboratory (MEL) of MITI, Tsukuba, Japan for the theme of research “*Control and Measurement of Nanometer Sized Particles*”.

STA Senior Scientist Fellowship No 499033 (Science and Technology Agency, Japan) for period November 3 – December 2, 1999 at Mechanical Engineering Laboratory (MEL) of MITI, Tsukuba, Japan for the theme of research “*Manufacturing, Measurement and Analysis of Nano-Scale Particles*”.

Program Manager, VTT Chemical Technology Basic Technology Research Program “*Ultrafine Particles*”, 1995 – 1997. Advanced Aerosol Technology Laboratories designed and constructed and High Resolution FE-SEM and FE-(S)TEM facilities were selected, purchased and installed during this program in collaboration between VTT Chemical Technology, VTT Manufacturing Technology and VTT Energy.

Group Manager, Aerosol Technology Group, VTT Processes, Espoo, Finland, 2002-2005.

Group Manager, Aerosol Technology Group, VTT Chemical Technology, Espoo, Finland, 1994 – 2001.

Head of the Aerosol Technology Group, Technical Research Centre of Finland, Laboratory of Heating and Ventilation, Espoo, Finland, 1991 – 1993.

Chief Research Scientist, VTT Chemical Technology, Espoo, Finland, 1993 – 2000.

Senior Research Scientist, Technical Research Centre of Finland, Laboratory of Heating and Ventilation, Espoo, Finland, 1989-1993.

Research Scientist, Technical Research Centre of Finland, Laboratory of Heating and Ventilation, Espoo, Finland, 1985-1989.

Research Scientist, Finnish Army Research Centre, Helsinki, Finland, 1986-1987.

Junior Research Scientist, Technical Research Centre of Finland, Laboratory of Heating and Ventilation, Espoo, Finland, 1983-1985.

CURRENT RESEARCH INTERESTS

Gas phase synthesis of nanomaterials, including carbon nanotubes and fullerenes and polymer-drug composite nanoparticles and their characterization with electron microscopic methods. Electronics and energy applications of nanocarbons.

CURRENT AND PAST MAJOR PUBLIC RESEARCH GRANTS

Fundamentals of Material Assembly in Drug Nanoparticles and Formation of Nanocrystalline Coatings. Funded by Academy of Finland for 488 € during 1.1.2010-31.12.2013.

EU FP7 LARGE Project No NMP4-LA-2009-211464 *Novel Concepts, Methods, and Technologies for the Production of Portable, Easy-to-Use Devices for the Measurement and Analysis of Airborne Engineered Nanoparticles in Workplace Air.* Funded by EU for 418 000 € during 1.4.2009 - 31.03.2013 (sub project 1 leader in a consortium of 26 partners, total EU funding for consortium 9 490 888 €).

TKK 100 Year Anniversary Research Program MIDE Project CNB-E (*Carbon NanoBuds for Energy Applications*). Funded by TKK for 650 000 € during 1.1.2008 - 31.12.2012 (coordinating partner in a consortium, total funding for consortium 1 880 000 €).

EU FP6 STREP Project No 033350 *BNC Tubes (Novel, Heteroatomic Boron, Nitrogen and Carbon Nanotubes)*. Funded by EU for 880 000 € during 1.2.2007 - 31.01.2010 (coordinating partner in a consortium, total EU funding for consortium 2 500 000 €, total consortium funding 3 250 000 €).

Tailored Nanostabilizers for Biocomponent Interfaces (TAINA). Funded by TEKES via FINNANO research program for 216 000 € during 1.7.2005 – 30.06.2008 (partner in a consortium).

Nanomaterials in Wireless Tags Based on Printed Electronics (PRINTAG). Funded by TEKES via FINNANO research program for 168 000 € during 1.6.2005 – 31.05.2008 (partner in a consortium).

Molecular Scale memory Elements (MOME). Funded by TEKES via FINNANO research program for 195 000 € during 1.8.2005 – 31.07.2008 (partner in a consortium).

Biophysical Modelling of Technical Phenomena for Energy and Fluid Flow Engineering Applications. Funded by TEKES and VTT for 92 000 € during 1.7.2005 – 31.12.2006 (partner in a consortium).

Fundamentals of novel drug nanoparticle synthesis method. Funded by Academy of Finland for 225 170 € during 1.1.2005-31.12.2008.

EU FP6 SSA Project No 013908 *NANOTOX (Investigative Support for the Elucidation of the Toxicological Impact of Nanoparticles on Human Health and the Environment)*. Funded by EU for 84 804 € during 1.2.2005 - 31.12.2007 (partner in a consortium).

Synthesis and mechanistic investigations of single walled carbon nanotube growth: chirality and size control. Funded by Academy of Finland via post-doc program for 153 000 € during 1.8.2004 – 31.12.2007.

EU FP6 SSA Project *NANOROADMAP (Technological roadmaps till 2014 in nanoscience and nanotechnologies in materials, health and medical systems, energy fields)*. Funded by EU and VTT Processes for 264 000 € during 1.1.2004 - 31.12.2005 (partner in a consortium).

Nanoparticle emissions simulator. Funded by TEKES via FINE research program for 400 000 € during 1.1.2004-31.12.2007 (coordinating partner in a consortium, total funding for consortium 800 000 €).

Electronic properties of carbon nanotubes. Funded by Academy of Finland via TULE research program for 132 000 € during 1.7.2003 – 31.12.2006 (partner in a consortium).

EU FP5 RTN2-2001-00510 Project “*Nanocluster*”. Funded by EU for 190 000 € during 1.10.2002 – 30.9.2006 (partner in a consortium).

Control of Small Particle Surface Forces and Surface Oxidation. generic project of the TEKES-PINTA Research Program. Funded by TEKES and VTT Processes for 800 000 € during 2002 -2006 (coordinating partner in a consortium, total funding for consortium 3 400 000 €).

Participation to *TEKES Nanotechnology Research Program* 1996-1998, collaboration with Kemira Pigments and Neste in several projects.

Participation to *TEKES LIEKKI Combustion Research Program* 1991-1998, collaboration with Ahlström, Tampella, Foster Wheeler, IVO in several projects.

Participation to *TEKES SIHTI Environmental Engineering Research Program* 1991-1998, collaboration with ABB and IVO in several projects.

Participation to *TEKES Pigment Research Program* 1999-2002, collaboration with pigment and paper manufacturing companies.

AWARDS

Finnish Association for Aerosol Research (FAAR) Award 1992. For Excellent work in Aerosol Science related to Combustion and Aerosol Measurement.

Best Paper, Engineering Foundation Conference on Application of Advanced Technology to Ash-Related Problems in Boilers, Waterville Valley, New Hampshire, USA, July 16-21, 1995.

Air Pollution Control Research Award of 2001, Hengitysliitto (HELI), Helsinki, Finland.

Walter A. Mueller Memorial Award for the Best paper at the 10th International Symposium on Corrosion in the Pulp and Paper Industry, August 21-24, 2001, Helsinki, Finland. Co-Authors: Mäkipää, M., Lind, T., Pyykönen, J., McKeough, P., Oksa, M., Malkow, Th., Fordham, R.J., Baxter, D., Koivisto, L., Saviharju, K. and Vakkilainen, E.

ACTIVITIES RELATED TO SCIENTIFIC JOURNALS

Associate Editor

Aerosol Science and Technology, 1998-2001

Member of the Editorial Board

Report Series in Aerosol Science, 1991–2003
 Journal of Aerosol Science, 1994-2000
 Aerosol Science and Technology, 1994-1998
 Powder Technology, 1999– present

Reviewer

Nature Materials
 Nature Nanotechnology
 Aerosol Science and Technology
 Applied Organometallic Chemistry
 Carbon
 Chemistry of Materials
 Combustion and Flame
 Combustion Science and Technology
 Drug Development and Industrial Pharmacy
 Energy and Fuels
 Environmental Science and Technology
 Fuel Processing Technology
 Journal of Aerosol Science
 Journal of Applied Physics

Journal of Hazardous Waste and Hazardous Materials
 Journal of Nanoparticle Research
 Journal of Physical Chemistry
 Journal of Pulp and Paper Science Canada
 Powder Technology
 Water, Air & Soil Pollution

Guest Editor

Journal of Aerosol Science 29(4)1998, Special Issue on Combustion Aerosols

**ACTIVITIES RELATED TO ACADEMIC DISSERTATIONS, APPOINTMENTS,
 TUTORING OF POST DOCTORAL SCIENTISTS AND REVIEWING PROPOSALS**

External Examiner of PhD-thesis

1. Simonsen, O. (1993) *Condensation of Sulphuric Acid Vapors – Dynamics of Binary Aerosol Condensation*. Department of Chemical Engineering, Technical University of Denmark, Lyngby, Denmark. (Opponent).
2. Christensen, K.A. (1995) *The Formation of Submicron Particles from the Combustion of Straw*. Department of Chemical Engineering, Technical University of Denmark, Lyngby, Denmark. (Opponent).
3. Nielsen, L. B. (1998) *Combustion Aerosols from Potassium-Containing Fuels*. Department of Chemical Engineering, Technical University of Denmark, Lyngby, Denmark. (Opponent).
4. Tikkanen, J. (1999) *Liquid Flame Spray Development and its Applications*. Tampere University of Technology, Department of Physics, Tampere, Finland. (Opponent).
5. Nielsen, M. T. (2001) *Field Studies of Combustion Aerosols*. Department of Chemical Engineering, Technical University of Denmark, Lyngby, Denmark. (Opponent).
6. Patrikainen, T. (2002) *Studies on the Consequences of the Control of Nitrogen Oxide Emission: Slagging of Ash and Scrubbing of Flue Gas*. University of Oulu, Department of Chemistry, Oulu, Finland. (Opponent).
7. Nuutinen, L. (2003) *The Role of Ash Forming Material in Agglomeration during Fluidized Bed Combustion of Biomass Fuel*. University of Oulu, Department of Chemistry, Oulu, Finland. (External Reviewer).
8. Karvinen, S. (2003) *Experimental and Theoretical Studies on Doped and Undoped Rutile and Anatase TiO₂ for Photocatalyst and Pigment Use*. University of Joensuu, Department of Chemistry, Joensuu, Finland. (External Reviewer).
9. Marjamäki, M. (2003) *Electrical Low Pressure Impactor: Modifications and particle Collection Characteristics*. Tampere University of Technology, Department of Physics, Tampere, Finland. (External Reviewer).
10. Santiago Jimenez Torrecilla (2004) *Submicron Particle Formation in Biomass Combustion*. University of Zaragoza, Zaragoza, Spain. (Opponent).
11. Michael Strand (2004) *Particle Formation and Emission in Moving Grate Boilers Operating on Woody Biofuels*. Växjö University, Sweden. (Opponent).
12. Ollila, H. (2005) *The Characterization of Inorganic Matter in Solid Fuel by SEM-EDS*. University of Oulu, Department of Chemistry, Oulu, Finland. (Opponent).

13. Tuukkanen, S. (2006) *Dielectrophoresis as a Tool for DNA-based Electronic Device Fabrication and Electrical Characterisation of Nanoscale DNA*. University of Jyväskylä, Jyväskylä, Finland. (External Reviewer).
14. Lyashenko, D. (2006) *Electronic and Non-Linear Optical Properties of Nanocarbons*. University of Joensuu, Joensuu, Finland. (Opponent).

Adviser of PhD-thesis

1. Latva-Somppi, J. (1998) *Experimental Studies on Pulp and Paper Mill Sludge Ash Behaviour in Fluidized Bed Combustors*. Helsinki University of Technology, Espoo, Finland.
2. Lind, T. (1999) *Fly Ash Formation during Circulating Fluidized Bed Combustion of Coal and Biomasses*. Helsinki University of Technology, Espoo, Finland.
3. Joutsensaari, J. (1999) *Aerosol Synthesis of Nanostructured, Ultrafine Fullerene Powders*. Tampere University of Technology, Tampere, Finland.
4. Mikkonen, P. (2000) *Fly Ash Particle Formation in Kraft Recovery Boilers*. Helsinki University of Technology, Co-Advised with J. Jokiniemi.
5. Valmari, T. (2000) *Potassium Behaviour during Combustion of Wood in Circulating Fluidised Bed Power Plants*. Helsinki University of Technology, Co-Advised with J. Jokiniemi.
6. Ahonen, P. (2001) *Aerosol Production and Crystallization of Titanium Dioxide from Metal Alkoxide Droplets*. Helsinki University of Technology, Espoo, Finland.
7. Eerikäinen, H. (2005) *Preparation of Nanoparticles Consisting of Methacrylic Polymers and Drugs by an Aerosol Flow Reactor Method*. University of Helsinki.
8. Moisala, A. (2006) *Studies on Single Walled Carbon Nanotubes Production via Gas-Phase Chemical Vapour Deposition*. University of Helsinki.
9. Lähde, A. (2008) *Production and Surface Modification of Pharmaceutical Nano- and Microparticles with the Aerosol Flow Reactor*. University of Jyväskylä.
10. Anissimov, A. *Studies on Carbon Nanotube Synthesis*. Helsinki University of Technology, Department of Physics. In Progress.
11. Reddy, P. *Synthesis and Nanoelectronics Applications of Carbon Nanotubes*. Helsinki University of Technology, Department of Physics. In Progress.
12. Zavodchikova, M. *Carbon Nanotube FETs*. Helsinki University of Technology, Department of Physics. In Progress.
13. Tian, Y. *Optical Properties of Carbon Nanobuds*. Helsinki University of Technology, Department of Physics. In Progress.
14. Nasibulina, L. *CNTs for reinforcing concrete*. Helsinki University of Technology, Department of Physics. In Progress.
15. Rackauskas, S. *Inorganic Nanowires*. Helsinki University of Technology, Department of Physics. In Progress.
16. Susi, T. *C-N-B Heteroatomic Nanotubes*. Helsinki University of Technology, Department of Physics. In Progress.
17. Kaskela, A. *CNT network transparent electrodes*. Helsinki University of Technology, Department of Physics. In Progress.

18. Zhen, Z. *SWCNT and CNB atomic structure studies with Cs-corrected TEM.* Helsinki University of Technology, Department of Physics. In Progress.

Reviewer for professor appointment

University of New Mexico, Albuquerque, NM, USA (twice)
 University of Utah, Salt Lake City, Utah, USA
 University of Minnesota, Minneapolis, MN, USA
 Technion – Israel Institute of Technology, Technion City, Haifa, Israel
 TU Graz, Graz, Austria

Tutoring of post doctoral scientists

PhD (Physics) Unto Tapper	1995 - 2004
PhD (Physics) Bertram Schleicher	1996 – 1998
PhD (Engineering Physics) Terttaliisa Lind	1999 - 2005
PhD (Materials Science) Olivier Richards	1999 – 2001
PhD (Chemical Engineering) Wiwik Watanabe	1999 – 2002
PhD (Physical Chemistry) Albert Nasibulin	1999– present
PhD (Physics) Hua Jiang	2002 - present
PhD (Polymer Chemistry) Janne Raula	2003– present
PhD (Materials Science) David Gonzales	2004– 2006
PhD (Materials Science) Paula Queipo	2004– 2006
PhD (Aeronautical Engineering) David P. Brown	2004 – 2007
PhD (Physics) Paola Ayala	2007 – 2009
PhD (Physical Chemistry) Virginia Ruiz	2008 – present
PhD (Physics) Markus Kaukonen	2008 – present

Reviewer of proposals for

Academy of Finland
 European Commission
 European Science Foundation
 Natural Sciences and Engineering Research Council of Canada
 Lithuanian State Science and Studies Foundation

Reviewer of Awards for

NanoMat – Innovation Award. Netzwerk Nanomaterialien. Geschäftsstelle und Forschungszentrum Karlsruhe GmbH, Karlsruhe, Germany, 2005 - present

ACTIVITIES IN ACADEMIC SOCIETIES

President, Finnish Association for Aerosol Research (FAAR),	1993 - 1997
Vice President, Finnish Association for Aerosol Research,	1990 – 1993
Member, Finnish Association for Aerosol Research,	1983 - present
Member, FAAR Board of Directors,	1997 – 2000
FAAR representative at IARA (Int. Aerosol Research Assembly)	1990- 1997
FAAR representative at EAA (European Aerosol Assembly),	1995- 1997
Member, American Association for Aerosol Research (AAAR),	1984 - 2005
Member, AAAR Membership Committee,	1993 – 1995
Member, AAAR Board of Directors,	1995 -1998
Member, The Combustion Institute,	1994 – 2000
Member, Japan Association for Aerosol Science and Technology,	1994 - present
Member, Japan Society of Powder Technology,	1994– present
Member, The Scandinavian Society for Electron Microscopy,	1997-present
Member, IARA Award Committee,	2000-2002
Member, American Association of Pharmaceutical Scientists,	2002- 2003

Member, GAeF (German Aerosol Society),	2003 –present
Member, GAeF Board of Directors,	2004 –present
Member, SFS (Finnish Physical Society),	2006 - 2007
Member, SFS Board of Directors,	2006 –2007
Vice-Member, Board of Directors, Center for New Materials, HUT	2006 - 2008

ACTIVITIES RELATED TO COMPANY MANAGEMENT

Member of the Board of Directors

Dekati Ltd, Tampere, Finland, January 2001 –August 2002
 StreamWise Finland Oy, Helsinki, Finland, January 2001–December 2002
 Particle Stream Technologies Oy, Helsinki, Finland, May 2001 – December 2002.
 Canatu Oy, Helsinki, Finland, May 2004 - present

Founding Member

StreamWise Finland Oy, Helsinki, Finland, January 2000
 Particle Stream Technologies Oy, Helsinki, Finland, May 2001
 Canatu Oy, Helsinki, Finland, May 2004
 Teicos Oy, Helsinki, Finland, May 2007

ACTIVITIES RELATED TO INTERNATIONAL SCIENTIFIC PROGRAMS AND MEETINGS

Member of the Steering Committee

European Science Foundation (ESF) Scientific Program on "Vapour-Phase Synthesis and Processing of Nano-Particle Materials", 1995-1999.

European Consortium of Nanostructured Materials (ECNM), 1996-1999.
 COST Action 523 "Nanostructured Materials", 1998-present.

Planning Committee of the National Nanoscience and Technology Report in Finland, September 2003-May 2004.

Member of the International Scientific Advisory Committee

The Fourth International Congress on Toxic Combustion Byproducts, The University of California, Berkeley, CA, USA, June 5.-7. 1995.

The Fifth International Congress on Toxic Combustion Byproducts, University of Dayton, Dayton, Ohio, USA, June 25.-27. 1997.

PARTEC 2004. International Congress for Particle Technology, March 16.-18. 2004, Nuremberg, Germany.

6th International Symposium & Exhibition on Gas Cleaning at High Temperatures, Osaka, Japan, October 20-22, 2005.

Nanofair 2006. 5th International Nanotechnology Symposium - New Ideas for Industry. November 21 – 22, 2006. Karlsruhe, Germany.

PARTEC 2007. International Congress for Particle Technology, March 27.-29. 2007, Nuremberg, Germany.

MSIN07. First International Forum on Metrology, Standardization and Industrial Quality of Carbon nanotubes. Rio de Janeiro, Brazil, June 22, 2007.

NT07. Eighth International Conference on the Science and Applications of Nanotubes. June 24-30, 2007, Ouro Preto, Minas Gerais, Brazil.

European NanOSH Conference –Nanotechnologies: A Critical Area in Occupational Safety and Health. Helsinki, Finland. December 3-5, 2007. NT07.

Tenth International Conference on the Science and Applications of Nanotubes. June 27 – July 2, 2010, Montreal, Canada.

Chairman of the International Scientific Meetings

The Fifth Finnish National Aerosol Symposium, June 1-3, 1993, Helsinki, Finland.

European Aerosol Conference, September 18-22, 1995, Helsinki, Finland.

Workshop on CVD and Aerosol Synthesis of Materials, May 27, 1996, Espoo, Finland.

NEDO International Joint Project “Ash Behaviour Control” Symposium, August 16.-17., 1996, Espoo, Finland.

International Seminar on “Advanced Scanning Electron Microscopy and Modern Energy Dispersive Spectroscopy”, November 21, 1996, Espoo, Finland.

International Seminar on “Advanced Transmission Electron Microscopy and Energy Spectroscopic Imaging”, September 11, 1997, Espoo, Finland.

European Science Foundation (ESF) Scientific Program on "Vapour-Phase Synthesis and Processing of Nano-Particle Materials 1995-1999" Workshop on “High Resolution Microscopy of Small Particles”, Espoo, Finland, September 12.-13., 1997.

European Science Foundation (ESF) Scientific Program on "Vapour-Phase Synthesis and Processing of Nano-Particle Materials 1995-1999" Workshop on “High Temperature Sampling and In-Situ Measurement of Nanoparticles”, Karlsruhe, Germany, May 21-22, 1999.

European Science Foundation (ESF) Scientific Program on "Vapour-Phase Synthesis and Processing of Nano-Particle Materials 1995-1999" Workshop on “High - Temperature Generated Nanoparticles and Computational Fluid Dynamics”, July 16-17, 1999, TU Denmark, Lyngby, Denmark.

Engineering Foundation (EF) Conference on Vapor Phase Manufacture of Materials III, Hotel Haikko Manor, Porvoo, Finland, July 26-31, 1999.

COST 523 Nanomaterials Working Group Meeting on Characterization, June 18-20, 2000, Espoo, Finland.

INVITED TALKS

International Scientific Meetings

1. European Aerosol Conference 1991, Karlsruhe, Germany.
2. European Aerosol Conference 1994, Blois, France, May 30 - June 2, 1994.
3. 4th Seminar of the series "Trends in Aerosol Research", special topic "Nanoparticles in Technology and in the Atmosphere", January 27, 1995, University of Duisburg,

Duisburg, Germany, organized by Deutsche Forschungsgemeinschaft (DFG), University of Duisburg and Gesellschaft für Aerosolforschung (GAeF).

4. Advanced Combustion Engineering Research Center (ACERC), 10th Annual Meeting, March 6-8, 1996, Salt Lake City, UT, USA.
5. 9th Symposium on Inorganic and Analytical Chemistry, May 24, 1996, Helsinki, Finland.
6. FINEM 96, October 23-24, 1996, Oulu, Finland.
7. Pienhiukkaseminaari: terveystvaikutukset, päästöt ja lainsäädäntö, Tampereen teknillinen korkeakoulu, Tampere, Finland, May 6, 1997.
8. Advanced Clean Coal Technology International Symposium '97, Tokyo, Japan, October 2-3, 1997.
9. Japan Society of Powder Technology Annual Meeting, November 24-25, 1999, Tokyo, Japan.
10. Behavior of Inorganic Material In Recovery Boilers, June 4-9 2000, Bar Harbor, Maine, USA.
11. Italian Section on Combustion Institute Meeting, May 22-25, 2000, Napoli, Italy.
12. IFRF Technical Topic Meeting on Combustion Generated Fine Particles and Toxic Metals, June 28, 2000, Copenhagen, Denmark.
13. Fysikaalisen Farmasian XII Vuosittainen Symposium, Helsinki, Finland, January 25, 2001.
14. IUVSTA Workshop on Nanoparticles, July 8-12, 2001, Stratford-upon-Avon, UK.
15. ICCCI 2003, International Conference on the Characterization and Control of Interfaces for High Quality Advanced Materials, September 24-27, 2003, Kurashiki, Japan.
16. The 21st Century COE Program Seminar and the 3rd International Seminar Engineering Frontiers, September 27, 2003, Kanazawa, Japan.
17. Japan Powder Technology Society (APPIE) Seminar on Hot Gas Cleaning. Tokyo Garden Palace Hotel, September 29, 2003, Tokyo, Japan.
18. EU FP5 Research and Training Program "NanoCluster" School, Leuven, Belgium, November 18.-21.2003.
19. 8th International Conference on Nanometer Scale Science and Technology, IVC-16/ICAA-12/NANO-08/AIV-17, Venice, Italy, June 28-July 2, 2004.
20. CAMEL-ELENA Carbon Nanotube Meeting, Helsinki, Finland, 30-31 August, 2004.
21. International Conference on Powder Technology, Makuhari, Japan, October 10-11, 2004 (2 talks).
22. NASA Johnson Space Center and the Rice University Center for Nanoscale Science and Technology workshop on "SWNT Nucleation and Growth Mechanisms", San Antonio, Texas, 8-12 April 2005.
23. Workshop on "Aerosol Based Nanotechnology", September 2, 2005. Ghent, Belgium.
24. 6th International Symposium & Exhibition on Gas Cleaning at High Temperatures, October 20-22, 2005, Osaka, Japan.

25. 20th IWEPNM 2006; Euroconference on Electronic Properties of Novel Materials : Molecular Nanostructures. Kirchberg, Austria, 4.-11.3.2006.
26. Particles 2006. Medical/Biochemical Diagnostic, Pharmaceutical, and Drug Delivery Applications of Particle Technology. 13-16 May 2006, Orlando, Florida, USA.
27. Nanotechnology in Northern Europe. NTNE2006 Congress and Exhibition. 16-18 May 2006, Helsinki, Finland.
28. NT06. Seventh International Conference on the Science and Applications of Nanotubes. Nanotube Tutorial "Synthesis Techniques". June 18-23, 2006, Nagano, Japan.
29. ICCCI 2006, The Second International Conference on the Characterization and Control of Interfaces for High Quality Advanced Materials, and Joining Technology for New Metallic Glass and Inorganic Materials. September 6-9, 2006, Kurashiki, Japan.
30. Nanofair 2006. 5th International Nanotechnology Symposium - New Ideas for Industry. November 21 – 22, 2006. Karlsruhe, Germany.
31. NASA Johnson Space Center and the Rice University Center for Nanoscale Science and Technology workshop on "SWNT Nucleation and Growth Mechanisms", Burnett, Texas, USA, 15-19 April 2007.
32. ChinaNANO2007, Beijing, China, June 4-6, 2007.
33. NT07. Eighth International Conference on the Science and Applications of Nanotubes. June 24-30, 2007, Ouro Preto, Minas Gerais, Brazil.
34. The 17th International Vacuum Congress (IVC-17), 13th International Conference on Surface Science (ICSS-13), International Conference on Nanoscience and Technology 2007 (ICN+T 2007), 6th Nordic Conference on Surface Science (NCSS-6), 22nd Nordic Semiconductor Meeting (NSM-22) and 4th Swedish Vacuum and Materials Science Meeting (SVM-4), Stockholm, Sweden, July 1-6, 2007.
35. Development of Nanotechnologies and Nanomaterials. Russian-Finnish Scientific Conference, 12 – 13 September 2007, Helsinki
36. 3rd NASA-NIST Workshop on Nanotube Measurements. Gaithersburg, MD, USA September 26-28, 2007.
37. GDR-E Nano-E Annual Meeting on Science and Applications of Nanotubes. Autrans, France, October 15-19, 2007.
38. NanoScience Days, Jyväskylä, Finland. October 25-26, 2007.
39. MRS Fall Meeting, Boston, USA. November 26-30, 2007.
40. European NanOSH Conference – Nanotechnologies: A Critical Area in Occupational Safety and Health. Helsinki, Finland. December 3-5, 2007.
41. 13th Fluidization and Powder & Particle Process Symposium. Tokyo, Japan, December 5-6, 2007.
42. 16th Nisshin Engineering Particle Technology International Seminar, NEPTIS-16. Sendai, Japan, December 9-11, 2007.
43. The Villa Conference on "Interaction Among Nanostructures" (VC-IAN). Orlando, FL, USA. February 3-7, 2008.
44. Particles 2008. Particle Synthesis, Characterization, and Particle-Based Advanced Materials. Orlando, FL, USA. 10-13 May, 2008.
45. MIICS 2008. Mikkeli International Industrial Coating Symposium. Mikkeli, Finland, March 26-28, 2008.
46. LPHYS2008. 17th International Laser Physics Workshop, Trondheim, Norway. June 30 - July 4, 2008.
47. NanoteC08. International Conference on carbon nanoscience and nanotechnology. August 27-30, 2008, University of Sussex, Brighton, UK.

48. Nanotech Northern Europe (NTNE) 2008. Copenhagen, Denmark, September 23-25, 2008.
49. Nanotechnology International Forum. December 3-5, 2008. Moscow, Russia.
50. International Powder Technology Forum 2009. Frankfurt, Germany. May 12-13, 2009.
51. NT09. Tenth International Conference on the Science and Applications of Nanotubes. June 21-26, 2009, Beijing, China.
52. SPIE Optics + Photonics Conference 7399: Carbon Nanotubes, Graphene and Associated Devices II. San Diego, CA, USA. August 2-6, 2009.
53. ESF Research Conference: Nanocarbons - From Physicochemical and Biological Properties to Biomedical and Environmental Effects. Acquafredda di Maratea, Italy. 8-13 September 2009.
54. Second International Nanotechnology Forum. October 6-8, 2009. Moscow, Russia.
55. MIICS 2010. Mikkeli International Industrial Coating Symposium. Mikkeli, Finland, March 17-18, 2010.
56. 2010 International Conference on Solid State Devices and Materials (SSDM 2010). September 22-24, 2010. The University of Tokyo, Tokyo, Japan.

Universities, Research Institutes and Companies (Total of 136)

- 1986 Lovelace Inhalation Toxicology Research Institute (ITRI), NM, USA
Los Alamos National Laboratory, NM, USA
University of Minnesota, MN, USA
- 1987 Finnish Army Research Centre, Helsinki, Finland
- 1988 University of Cincinnati, OH, USA
- 1989 Technical University of Switzerland (ETH), Zurich, Switzerland
Finnish Meteorological Institute, Helsinki, Finland
- 1990 Imatran Voima (IVO), Vantaa, Finland
- 1991 PSI Technology, Inc., MA, USA
FLS Miljo, Copenhagen, Denmark
Ahlström, Karhula, Finland
Tampella Power, Tampere, Finland
- 1992 Oregon State University, OR, USA
Tokyo A & T University, Tokyo, Japan
RIKEN (Institute for Physical and Chemical Research), Tokyo, Japan
CRIEPI, Yokosuka Research Laboratories, Nagasaki, Japan
University of Vienna, Vienna, Austria
Helsinki University of Technology, Espoo, Finland
Outokumpu Research, Inc., Pori, Finland
Åbo Akademi University, Turku, Finland
- 1993 University of New Mexico, NM, USA
ABB Fläkt, Växjö, Sweden
EnviroPower, Tampere, Finland
ABB Corporate Research Center, Baden, Switzerland
PSI PowerServe, Inc., MA, USA
Oregon State University, OR, USA
Prupprecht & Patashnik, Co, NY, USA
University of Toronto, Toronto, Canada
Energy and Environmental Research Center, University of North Dakota, ND, USA
Ahlstrom Recovery Inc., GA, USA

- 1994 University of Utah, UT, USA
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- 2007 KCL, Espoo, Finland
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- 2008 Shinshu University, Nagano, Japan
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PUBLICATIONS

Prof. Kauppinen has more than 170 fully refereed journal publications and 17 patents. In addition to fully refereed journal publications, prof. Kauppinen has international conference proceedings publications, book chapters, conference abstracts, popular and news articles as well as technical reports which are listed in VTT publications database JURE at

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JURE database shows currently total of **616** publications.

LANGUAGE SKILLS

Finnish (native language)
English (fluent), Swedish (fluent), German (moderate)

MILITARY SERVICE

1986 – 1987 (8 months), 3 month appointment at Finnish Army Research Laboratory.

Helsinki, March 16, 2010.