

## CURRICULUM VITAE, CV (January 30<sup>th</sup>, 2009)

**Name:** Riitta Liisa KEISKI (née Kalliokoski)      **Nationality:** Finnish  
**Date of Birth:** March 21<sup>st</sup>, 1956, Halsua      **Marital Status:** Married, no children  
**Address (work):** University of Oulu, Department of Process and Environmental Engineering;  
P.O.Box 4300, FIN-90014 University of Oulu  
**Home page:** <http://cc.oulu.fi/~polamwww/>

---

### 1. University Education and Training

**Diploma Engineer** (M.Sc.(Eng.)), University of Oulu, Department of Process Engineering, June 8, 1981, major subject: process engineering, "with honors"

**Licentiate in Technology** (Lic.Tech.), University of Oulu, Department of Process Engineering, October 15, 1984, major subject: chemical process engineering, "excellent"

**Doctor of Science in Technology** (D.Sc.(Tech.)), University of Oulu, Department of Process Engineering, December 9, 1991, major subject: chemical engineering, heterogeneous catalysis 'The Water-Gas Shift Reaction in Nonisothermal Conditions over an Iron Oxide/Chromium Oxide Catalyst'

### 2. Present and Previous Major Professional Appointments

**Professor in Mass and Heat Transfer**, University of Oulu, Department of Process and Environmental Engineering, Oulu, June 1, 2001-

**Docent in Chemical Process Engineering, especially in Heterogeneous Catalysis and Environmental Engineering**, University of Oulu, Faculty of Technology, February 1, 1997-

**Vice-Rector of the University of Oulu**, 08.2006-12.2009

**Head of the Department of Process and Environmental Engineering**, 01.2006-07.2006; **Vice-Head of the Department of Process and Environmental Engineering**, 08.2006-; **Head of the Laboratory of Mass and Heat Transfer Process Engineering**, 06.2001-; **Head of the Unit for Industrial Environmental Engineering**, 2007-

**Researcher**, Kemira Oy, Oulu Research Laboratory, Oulu, 1981-1982

**Research Assistant**, Academy of Finland (in Oulu), 1984-1985, 1986-1987; **Junior Researcher**, Academy of Finland (in Oulu), 1986, 1987-1992

**Researcher**, Kemira Metalkat Oy, Catalyst Research, Oulu, 1993-1994

**Acting Professor in Chemical Process Engineering**, University of Oulu, 1994; **Senior Researcher**, Academy of Finland (in Oulu), 1995, 1996-1997; **Assistant Professor**, University of Oulu, 1989-1994, 1994- 1998; **Acting Professor in Bioprocess Engineering**, University of Oulu, 1998-2000.; **Special Researcher in Industrial Environmental Engineering**, University of Oulu, 1998-2001.

### 3. Major Memberships in Scientific and Educational Societies and Committees

#### **The Academy of Finland:**

The Board of the Academy of Finland, A member (2001-2003, 2004-2006)

The Research Council for Natural Sciences and Engineering, A member (1998-2000), The chair (2001-2003, 2004-2006)

The Sub-committee of Development Studies: A member (1998-2003), The Chair (2004-2006)

The Organizing Committee of the Science Watch 2003: Natural Sciences and Engineering: The chair; The Steering Group for the evaluation of the State and Quality of Finnish Research, and the State and Quality of Food Science and Technology, A member (2003)

Steering Group of the Employment, Placement and Demand of PhDs in Finland, The chair (2002); The Working group for the Equitally plan of the Academy of Finland, The chair (2004-2005)

Member and chair in preparatory, programme and steering groups of research programmes at the Academy of Finland (e.g. the Research Programmes TUKEVA (chair), ESGEMO (member), INFRA (member), WOOD WISDOM (member), FCIBER (member), KETJU, Sustainable production and products (chair), ELVIRA, Nutrition, Food and Health (member))(2001-2006)

The Working group for the evaluation and selection of the Finnish Centre of Excellence research groups, A member (2001-2006, three times); The Working group for the evaluation of the Finnish Graduate School groups, A member (1998-2006); State and Quality of Finnish Research -working groups, The chair, a member (2000, 2003, 2006); Industry-Academia –working group, A member (2004); The Programme group of the KETJU, Sustainable production and products research, A member (2006-2010)

#### ***Ministry of Education and UNESCO:***

The Finnish National Commission for UNESCO: A member (1999-2001, 2002-2006)  
 The Development Group of the Graduate School System in Finland (TUKO): A member (2002-2005)  
 The Working Group for Education and Research in Engineering in Finland: A member (2005)  
 The Board of Study Programme on Russian and Eastern-European Research: A member (2006-2008)  
 The Working Group of the National GRID strategy: A member (2005-2006)  
 The National Review Group of the UNESCO Science Programmes: A member (2006)  
 The Advisory Board of Research Ethics, TENK, The vice-chair (1.2.2007-31.1.2010)

#### ***Ministry of Trade and Industry:***

The Board of MIKES, The vice-chair (2005-2009); The Board of TTA, Teknillisten tieteidien akatemia (2006-)

#### ***NORFA and NOS-N:***

The Board of NorFA, 2002-2004: A member and vice chair  
 The Working Group for the Nordic Graduate School System: A member (2001-2002); The Steering Group of the Nordic Centre of Excellence Programme: An observer (2002-2004); The Working Group for the Nordic Researcher Education for Technical Sciences: A member (2003)  
 Joint Committee of the Nordic Natural Science Research Councils (NOS-N), 2003-2006: The chair and a member; The Working Group for Nordic Data Grid Facility of NOS-N: The chair (2004-2005); The Working Group for the NORDITA Evaluation of NOS-N: The chair (2004-2005)

#### ***University of Oulu:***

The Leading Group of the Information Administration and the Library, 1995-1999, 2000: A member  
 The Board of Biocenter Oulu, 2000-2002: A member  
 The Board of Infotech Oulu, 2003-2006: A member and vice chair  
 Graduate School in Chemical Engineering (GSCE), 1995-2001: A member of the leading group  
 Graduate School for Energy Science and Technology (EST), 2007-: A member of the leading group  
 Environmental Division of the Oulu Chamber of Commerce, 2007-: A member  
 Working Group of Northern Environmental Research Alliance, 2000-: The chair  
 Leading Group of the Northern Environmental Research Alliance: A leading group specialist, 2000-  
 The Council for Science 2003-2004: A member  
 The Board of the Thule Institute, 2003-2005, 2005-: A member and vice-member  
 The Working Group for the Northern Cross Boarder University project, 2005- , A member; The Board of the Micro- and Nanotechnology Centre, 2005-2008: A member; The Advisory Committee of the Female Studies, 2004-2006: The chair; The follow-up group of the PhD Theses in the Department of Chemistry, 2005-: A member; The Equality Working group of the University of Oulu, 2006-: The chair; The Ethics working group of the University of Oulu, 2008-: The chair

#### ***Department and Faculty levels:***

The Council of the Faculty of Technology 2006-: A vice member; The Council of the Department of Process and Environmental Engineering 2001-2005, 2006-: A member and the chair (2006-)  
 The Board of the Advanced Steel Research, 2005-: A member  
 Head and Vice-Head of the Department of Process and Environmental Engineering 2006-; Head of the Laboratory of Mass and Heat Transfer Process Engineering 2001-; Head of the Unit for Industrial Environmental Engineering 2005-  
 Working group for the development of post-graduate studies in the Department of Process and Environmental Engineering, JOPOKKI, 2003-: The chair; Working group for the development of industrial environmental engineering studies in the Department of Process and Environmental Engineering, TYTTI, 2005-: The chair

### **Foundations, Societies, Conferences:**

The Expert Group of the Maj and Tor Nessling Foundation, 2003-2004, 2005-2006: A member (engineering)

The Fortum Foundation, 2007-: A vice-member

The Board of the Foundation for Environmental Technology, 2003-2005: A member

The Board of Tukisäätiö at the University of Oulu 2007-: A member

The Finnish Catalysis Society, 1988-1991 (secretary and treasurer), 1995-1999, 2003-2004 (the chair)

Nordic Symposium on Catalysis, Organizing group (the chair), Scientific group (the chair) in 2004; A member of the Organizing group in 1991

EUROPACAT 2007, A member of the Organizing group (member of the financing group) in 2006-2007

The 2<sup>nd</sup> EuCheMS Chemistry Congress, A member of the Scientific Committee

### **4. Fields of Research (financing now and earlier)**

Mass and heat transfer, Chemical process engineering, Environmental engineering, Process and environmental catalysis

- Catalytic processes and materials: environmental and process catalysis, especially NO<sub>x</sub>, VOC, CO<sub>2</sub> and SO<sub>x</sub> abatement technologies, catalytic CO<sub>2</sub> activation, automotive exhaust gas catalysis, malodorous compounds, chlorinated compounds, fine particulates, catalyst deactivation; photocatalysis; FTIR and other surface science methods (Academy of Finland, Tekes, Ahlström Foundation, Wihuri Foundation, Nessling, Graduate School in Chemical Engineering, Graduate School in Functional Surfaces, Companies, EU/EAKR)
- Kinetics and reactor design (Academy of Finland, EU/Cost Action 543, Tekes)
- Environmental engineering, air pollution control, flue and exhaust gas purification technologies (Graduate School in Chemical Engineering, Academy of Finland, Tekes)
- Sustainable production and energy: Green chemistry and engineering, and industrial ecology; Waste minimization and resources use optimization; Waste and wastewater treatment technologies, Waste management and recycling; Hydrogen production via reforming (and gasification) for e.g fuel cells; DMC and carbonic esters production utilizing CO<sub>2</sub> and biomass; Biochemical routes to higher alcohols (Graduate School in Environmental Science and Technology, Academy of Finland, EU/Cost Action 543)
- Mass and heat transfer and fluid dynamics, Fouling of surfaces (Academy of Finland, Tekes, EU/ERA-Matera, Companies, Graduate School in Energy Technology)
- Separation processes and phenomena integration; membranes and adsorption materials, supercritical CO<sub>2</sub> extraction (Academy of Finland, Thule at Oulu University, Companies)
- Bioprocess engineering, biofuels, biohydrogen; especially process development and down-stream processes (Graduate School in Chemical Engineering, Tekes, EU/ALMA, Academy of Finland)

### **5. Publications and Fields of Research and Present Research Group:**

Over 100 refereed publications in international scientific journals and proceedings, over 200 other scientific articles, monographs, abstracts, invited speeches and other publications.

Thematic areas of the publications: Heterogeneous catalysis, process and environmental catalysis, Nanomaterials, Mass and heat transfer, Chemical process engineering: reactor and separation unit design; Environmental engineering, Waste minimization and resources use optimization; Green chemistry and engineering, Fouling of surfaces, Engineering education.

A research group of **twenty three (23) active researchers**: seven (7) are senior researchers (doctors in technology or licentiates in technology) and sixteen (16) junior researchers

### **6. Teaching**

**Under-graduate courses, 1982-:** Environmental Technology, Environmental Ecology, Catalytic Processes, Environmental Catalysis, Introduction to Process Engineering, Principles of Chemical Process Engineering, Reactor Analysis and Design I-II, Process Synthesis, Industrial Ecology and Recycling, Green Chemistry, Research Methodology, Heat Transfer, Separation Processes, Scientific Writing

**Post-graduate courses 1996-:** Catalysts in Chemical Industry, 5 Cr. (GSCE, 03.1997); Environmental Technology, 5 Cr. (GSCE, 05.1996, 05.1999); Environmental Catalysis, 3 Cr. (GSCE 05.2000, 10.2000, 05.2003, 05.2005); Industrial Ecology, 3 Cr. (GSCE, 05.2000); Air Pollution Control, 3 Cr. (GSCE, 11.2001); Waste Minimization/Resources Use Optimization, 3 Cr. (GSCE, 04.2004); How to Get a PhD: Hints and methods, 3 + 5 Cr. (Faculty of Technology, Autumn-Spring 2006-2007); Sustainable Production and Energy: Catalysis by Nanomaterials, Catalytic Microstructures. 5 + 2 Cr. (COST Action 543 Training School, 06.2008).

## 7. Other Academic and Professional Merits and Activities

**Qualification for Professor posts:** Chemical Technology at Åbo Akademi; 14.3.2000

**Opponent of Doctoral Theses:** **Metsämuuronen, S.** Critical flux and fouling in ultrafiltration of proteins, 2003; **Todorovic, J.** Pre-treatment of municipal solid waste incineration bottom ash for utilization in road construction at Luleå University of Technology, 2006; **Kuisma, P.** Seinärakenteen infrapunakonstrastin pieneneminen käyttäen ilmajäähdystystä ja säteilysuojausta at Lappeenranta University of Technology; 9.2.2007; **Seppälä, A.** Thermodynamic studies of osmotic flows and their application to energy conversion systems, Helsinki University of Technology, 26.5.2007; **Sillanpää, S.** Thermodynamic studies in flow metrology, Helsinki University of Technology, 30.1.2009.

**Pre-evaluation of Doctoral Theses:** **Hepola, J.** (2000, Helsinki University of Technology); **Kervinen, K.** (2004, Helsinki University), **Kuisma, P.** (2005, Lappeenranta University of Technology); **Seppälä, A.** (2007, Helsinki University of Technology), **Kaila, R.** (2008, Helsinki University of Technology)

### **Evaluation of Professor's Application and Docent's Applications:**

**Kilpinen, P.** Professor post in Environmental Engineering, especially in Combustion Technology (2005, Kuopio University); **Pettersson, L.** Professor post in Chemical Engineering, especially in Environmental Catalysis (2006, KTH, Sweden); **Kallas, J.** Docentship in Environmental Engineering (2000, Helsinki University of Technology); **Nuortila-Jokinen, J.** Docentship in Membrane Technology (2000, Lappeenranta University of Technology); **Pettersson, L.** Senior Lecturer's post in Chemical Engineering, especially in Environmental Catalysis (2006, KTH, Sweden)

### **Supervisor and Advisor of PhD Theses and Other Theses:**

Rahkamaa, K. (PhD in 2001, advisor); Lassi, U. (PhD in 2003, supervisor); Ojala, S. (PhD in 2005, supervisor); Kollu, T. (PhD in 2006, supervisor); Huuhtanen, M. (PhD in 2006, supervisor); Kröger, V. (PhD in 2007), supervisor); 16 active post-graduate students  
Supervised around fifty (50) M.Sc. in Engineering and Licentiate theses; Supervising and advising twenty (20) post-graduate students

### **Major International Studies and Researcher Visits:**

**Visiting Researcher** in the Department of Chemical Engineering at **Northwestern University in Evanston, Illinois, USA**, June-July, 1991 (two month)

**Visiting Researcher** in the Department of Chemistry at the **University of California in Berkeley, California, USA**, 1991-1992 (13 months); **Visiting Researcher** in the Department of Chemistry at the **University of California in Berkeley, California, USA**, January 2005 (one week)

**CNRS Visiting Professor** post at the **University of Bourgogne in Dijon, France**, September 2005, July 2006 (one month)

### **International Activities and Editorial Work:**

MC Chair of the COST Action 543, 2008-2010; MC member of the COST Action 701, 2008-  
Evaluation of FP7 proposals in spring 2008: Biorefinery and Nanoamterials and water purification

The Editorial Board of Catalysis Today, Elsevier, A Member, 2004-; A Quest Editor of Catalysis Today, Elsevier, The Chair 2004; A Quest Editor of Catalysis Today, Elsevier, 2007-2008

Evaluation of around 10 manuscripts annually for journals.

***Evaluation of Research Projects and Applications:******Evaluation of applications for the Academy of Finland between 1998-2006:***

Around 50-100 applications per year; General research money, Centers of excellence, Finnish graduate schools, Academy professors, Senior researcher positions, Doctoral positions, Applications to development studies and international projects, Infrastructure projects; Status and quality of Finnish research

***Evaluation of EU FP7 projects in Spring 2008:***

Call FP7-ENV-NMP-2008-2 Nanotechnologies for water treatment

Call FP7-KBBE-2007-2A, KBBE-2008-2B Biorefinery