

**1. Full name**

Ruuttunen, Kyösti Jukka
Male

2. Date and place of birth, nationality, current residence

Born April 28, 1970, Mikkelin mlk
Finnish citizen

Helsinki, Finland

kyosti.ruuttunen@aalto.fi

Tel. +358 50 3442981 (office)

3. Education and degrees awarded

Teacher's Pedagogical Qualification (AmO), Haaga-Helia University of Applied Sciences, May 2018

- Contact details: Haaga-Helia University of Applied Sciences, School of Vocational Teacher Education, Ratapihantie 13, FI-00520 Helsinki, FINLAND; Telephone: +358 9 229611
- Teacher's competence in Finnish high schools, vocational schools, and universities
- The extent of the studies is 60 ECTS credits, completed during twelve months

Doctor of Philosophy, Helsinki University of Technology, Department of Forest Products Technology, Forest Products Chemistry, November 2006

Title of the [Doctoral Thesis](#):

Distribution and redox reactions of certain polyoxometalate anions in chemical pulp suspensions

- Contact details: Aalto University, School of Chemical Engineering, P.O. Box 16100, 00076 Aalto, FINLAND
Telephone: +358 9 47001

Master of Science, University of Jyväskylä, Department of Chemistry, Organic Chemistry, August 1997

English translation of the Master's Thesis title (the thesis written in Finnish):

Optical properties and colour-transforming reactions of paper

4. Other education and training, qualifications and skills

Participation in "Future Research Leaders Programme", a training aimed to active research personnel of Aalto University School of Chemical Engineering. December, 2014 – May, 2015.

- Training organised by: Strategic Support for Research and Education, Aalto University, P.O. Box 11000, 00076 Aalto, FINLAND

5. Linguistic skills

Finnish, mother tongue

English, excellent

- Self-assessment according to the Europass Language Passport
 - Understanding: 1. Listening – C2 (Proficient user); 2. Reading – C2
 - Speaking: 1. Spoken interaction – C2; 2. Spoken production – C2
 - Writing: C2

Spanish, very good

- Self-assessment according to the Europass Language Passport
 - Understanding: 1. Listening – B2 (Independent user); 2. Reading – B2
 - Speaking: 1. Spoken interaction – B2; 2. Spoken production – B2
 - Writing: B2

Swedish, good

- Self-assessment according to the Europass Language Passport
 - Understanding: 1. Listening – B2; 2. Reading – B1
 - Speaking: 1. Spoken interaction – A2 (Basic user); 2. Spoken production – A2
 - Writing: B1

6. Current position

University Lecturer (Biomass refining), Aalto University School of Chemical Engineering, Department of Bioproducts and Biosystems, since April 2014 (on-going)

7. Previous work experience

Teaching Researcher (Biorefineries), Aalto University School of Chemical Engineering, Department of Forest Products Technology, January 2009 – March 2014

Project Manager / Honorary Visiting Professor, Joint project with Helsinki University of Technology and School of Engineering of Universidad de la República, Montevideo, Uruguay, January 2007 – December 2008

Doctoral student, Helsinki University of Technology, Department of Forest Products Technology, Laboratory of Forest Products Chemistry, December 2000 – December 2006

Researcher (voluntary work), CESSCO (Centro de Estudios y Control de Contaminantes), Tegucigalpa, Honduras, February – September 2000

Research assistant, December 1998 – September 1999: Helsinki University of Technology, Laboratory of Forest Products Chemistry

Civil alternative service, December 1997 – December 1998: Helsinki University of Technology, Laboratory of Forest Products Chemistry

8. Research funding as well as leadership and supervision

Responsible leader of the project “DEFIBRE, Effect of Fibre Wall Chemistry on Energy Demand in Wood”, June 2011 – December 2012. Project funded by Academy of Finland as a part of the Sustainable Energy programme, amount of funding 286 391 €.

Secondary supervisor, Ph.D. student Estefania Isaza Ferro, “*Chemistry and principles of catalytic pulp bleaching*”, Aalto University, since May 2019 (on-going; Responsible supervisor of the work: Professor Tapani Vuorinen).

Secondary supervisor, Ph.D. student Syed Farhan Hashmi, “*Conversion of Lignin Biomass to Higher Value Products through Lignin Depolymerization*”, Aalto University, since September 2013 (on-going; Responsible supervisor of the work: Professor Herbert Sixta).

Secondary supervisor, doctoral student Marcelo Coelho dos Santos Muguet Soares, “*Effect of Fibre Wall Chemistry on Pulping Processes of Novel Eucalyptus Hybrids*”, Aalto University, 2011 – 2013 (thesis defence November 2013; Responsible supervisor of the work: Professor Tapani Vuorinen).

9. Merits in teaching and pedagogical competence

Responsible teacher, “CHEM-E0100 Academic Learning Community, 5 ECTS, Master’s Programme in Chemical, Biochemical and Materials Engineering, Aalto University School of Chemical Engineering, since 2018 (on-going)

- Compulsory course to all students in the master’s programme (ca. 120 students annually)

Teacher’s Pedagogical Qualification (AmO), Haaga-Helia University of Applied Sciences, May 2018

Responsible teacher, “CHEM-E1160 Biomass Pretreatment and Fractionation - in Laboratory”, 5 ECTS, Master’s Programme in Chemical, Biochemical and Materials Engineering, Aalto University School of Chemical Engineering, since 2016 (on-going)

- Compulsory project-based laboratory course in the Biomass Refining major; 10-15 students annually
- See the course web-based workspace here: <https://mycourses.aalto.fi/course/view.php?id=20386>

Responsible teacher, “Puu-0.4110 Conventional and Non-conventional Pulping as a Basis for Biorefinery”, 7 ECTS, Master’s Programme in Bioproduct Technology, Aalto University School of Chemical Technology, 2012 – 2015

- see the course web-based workspace here: <https://mycourses.aalto.fi/course/view.php?id=8354>

Participation in planning the Master’s Programme in Chemical, Biochemical and Materials Engineering in Aalto University, School of Chemical Engineering (two-year programme, 120 ECTS; launched in September, 2015)

- Active participation in three major subject’s planning groups: Biomass Refining, Chemical Engineering, and Biotechnology

Responsible teacher of four courses belonging to the International Master’s Programme in Forest Products Technology, Aalto University, 2009-2012

Coordinating teacher in the International Program of Pulp and Paper Technology, Universidad de la República, School of Engineering, Montevideo, Uruguay, 2007-2008

- The tasks included curriculum planning, teaching 4 lecture courses, and coordination of the programme

Secondary supervisor of several M.Sc. theses, Aalto University, since 2009 (on-going), including

- Leivo, J., Optimizing supply chain costs by minimizing the variance in raw material composition, 2018
- Wegelius, O., Liquefaction of lignin: uncatalysed and catalysed ethanolysis of lignin, 2017
- Miettinen, M., Techno-economic evaluation of a selected cellulosic ethanol production concept, 2016
- Lahnalampi, A., Bleaching of alkali extracted sugar beet pulp, 2016
- Korhonen, V., Optimization of the evaporation plant capacity, 2014
- Costabel, L., Alkaline pre-extraction of birch wood prior to alkaline pulping, 2014
- Ukonaho, K.-V., Methanol balance of digestion and evaporation plant and methanol utilization possibilities for a kraft pulp mill, 2013
- Nousiainen T., Crude tall oil production improvement, 2012
- Kontu, T., Sodium and sulfur balance of a kraft pulp mill, 2010
- Tamminen, T., Final bleaching of kraft pulp: The optimization of the first chlorine dioxide stage (D1), 2010

Secondary supervisor of 2 M.Sc. thesis, Helsinki University of Technology, 2003-2009.

- Wu, Z., Application of a binuclear manganese catalyst to final peroxide bleaching of a softwood kraft pulp, 2009
- Tarvo, V., A model for polyoxometalate bleaching of pulp, 2003

Responsible supervisor of ca. 20 B.Sc. theses, Aalto University, since 2009 (on-going)

- Theses in Finnish. Data of some recent theses below in English.
 - Kärkkäinen, E., Usage of ionic liquids in delignification
 - Hammar, Biochar and its formation in a biorefinery process
 - Niskanen, J., Steam explosion process and its effects on the chemical structure of wood lignin
 - Pastinen-Kurula, H., Production of oligosaccharides from wood hemicelluloses
 - Miettinen, M., Manufacturing bio-based diesel from talloil
 - Chan, K., Slow pyrolysis of biomass
 - Gullstén, N., Structure and chemistry of grass plant cells
 - Kiuru, H., Raw materials for biorefineries: the availability of grass plants and residues

10. Other academic merits

Vice member of the Academic Committee of Aalto University School of Chemical Engineering (KTAK), representing teaching staff, since 2018 (on-going)

Member of the Academic Committee of Aalto University School of Chemical Engineering (KTAK), representing teaching staff, 2014-2017

Vice member of the Academic Committee of Aalto University School of Chemical Engineering (KTAK), representing teaching staff, 2011-2013

Keynote Speaker, “Condensation of extractive compounds in fresh wood”, Forest Biorefining Conference IFBC – 2nd, June 9-12, 2019, Thunder Bay, Canada

Keynote Speaker, “Advances in Dissolving Pulp Technology”, 6th International Colloquium on Eucalyptus Pulp, November 24-27, 2013, Colonia del Sacramento, Uruguay

Member of board in four M.Sc. defences, School of Engineering, UDELAR, Montevideo, Uruguay (2009-2014).

Journals for which I have refereed scientific papers, include Biomass and Bioenergy, Journal of Wood Science, Industrial and Engineering Chemistry Research, Chemical Engineering Communications, and BioResources; since 2005 (on-going)

11. Scientific impact of research

Publications

2 thesis dissertations (D.Sc., M.Sc.)

12 peer-reviewed journal articles

12 non-refereed conference full papers

My newest published journal article is

Afsahi, G., Isaza Ferro, E., Ruuttunen, K., Vuorinen, T., Optimized Catalytic Bleaching Sequences for Eucalyptus Kraft Pulp, Journal of Wood Chemistry and Technology 39 (2019) 178-186 DOI: [10.1080/02773813.2018.1553185](https://doi.org/10.1080/02773813.2018.1553185)

My ResearcherID is [G-8978-2014](https://orcid.org/0000-0001-9152-4444)

and there my most cited publications are

Ruuttunen, K., Vuorinen, T., Developing catalytic oxygen delignification for kraft pulp: Kinetic study of lignin oxidation with polyoxometalate anions, Industrial & Engineering Chemistry Research 44 (2005) 4284-4291 DOI: [10.1021/ie048836o](https://doi.org/10.1021/ie048836o)
Times Cited: 17

Ruuttunen, K., Vuorinen, T., Donnan effect and distribution of the $[\text{Si}^{\text{IV}}\text{W}_{11}\text{O}_{40}]^{6-}$ anion in pulp suspension, Journal of Pulp and Paper Science 30 (2004) 9-14
Times Cited: 7

12. Positions of trust in society and other societal merits

Member of board, Suomen puu- ja polymeerikemian yhdistys (Finnish Society of Wood and Polymer Chemistry), 2005-2007