

Constance Ann Schall

Professional Preparation

Cornell University	Chemical Engineering	B.S.	1978
Rutgers University	Chemical Engineering	M.S.	1992
Rutgers University	Chemical Engineering	Ph.D.	1995

Appointments

2010 to date	University of Toledo, Professor & Graduate Director, Chemical & Environmental Engineering
2002 - 2010	University of Toledo, Associate Professor and Undergraduate Director (2002-2007), Chemical & Environmental Engineering
1998 – 2001	University of Toledo, Assistant Professor of Chemical & Environmental Engineering
1995-97	University of Tulsa, Assistant Professor of Chemical Engineering
1982-1987	Lederle Laboratories; Pearl River, NY. Project Engineer. Consulting engineer (1985 to 1987).
1980-1981	Soltex Polymer Corporation; Deer Park, TX. Production Engineer.
1978-1980	Mobil Chemical Company, Phosphorus Division; Richmond, VA. Staff Engineer.

Products (five most closely related to proposed project)

Patents

- C.A. Schall, S.V. Farahani, "Enhancement of lignocellulose saccharification via a low temperature ionic liquid pre-treatment scheme", Provisional patent, filed Feb. 2014, application number 61/940,542.
- Issued U.S. patent #8,030,030; S. Varanasi, C. Schall, A. P. Dadi, J. Anderson, K. Rao, P. Paripati, and G. Kumar, *Biomass Pretreatment*, (2011) Patent Assignee: Univ of Toledo, Suganit Systems.
- Issued U.S. patents #8,236,536; #7,674,608B2; S. Varanasi, C. Schall and A. P. Dadi, *Saccharifying cellulose*, (2012) Patent Assignee: Univ of Toledo.

Papers

- Samira Vasheghani Farahani, Yong Wah Kim, Constance A. Schall, *A coupled low temperature oxidative and ionic liquid pretreatment of lignocellulosic biomass*, *Catalysis Today* (2016), accepted.
- Christopher J. Barr, B. Leif Hanson, Kevin Click, Grace Perotta, Constance A. Schall, *Influence of ionic-liquid incubation temperature on changes in cellulose structure, biomass composition, and enzymatic digestibility*, *Cellulose* (2014), 21: 973-982.

Products (five other significant products)

- Samayam, I.P.; B.L. Hanson, P. Langan, C.A. Schall, *Ionic-liquid-induced changes in cellulose structure associated with enhanced biomass hydrolysis*, *Biomacromolecules* (2011). 12(8), 3091-3098.

Barr, C.J.; J.A. Mertens, C. A. Schall, *Critical cellulase and hemicellulase activities for hydrolysis of ionic liquid pretreated biomass*, Bioresource Technology (2012), 104, 408-485.

Samayam, Indira P., C.A. Schall (2010) *Saccharification of ionic liquid pretreated biomass with commercial enzyme mixtures*, BioResource Technology 101, 3561–3566.

Lucas, M.; G. L. Wagner, Y. Nishiyama, L. Hanson, I.P. Samayam, C.A. Schall, P. Langan, K.D. Rector, (2011) *Reversible swelling of the cell wall of poplar biomass by ionic liquid at room temperature*, Bioresource Technology 102(6), 4518-4523.

Dadi, A. P., S. Varanasi, C. A. Schall (2006) *Enhancement of cellulose saccharification kinetics using an ionic liquid pretreatment step*, Biotechnology and Bioengineering, 95(5), 904-910.

Synergistic Activities

NSF reviewer CBET, Catalysis & Biocatalysis, 2010-2016.

USDA-ARS, Peoria, IL – External reviewer for 2014 five year plans: Bioenergy Research Unit – Biorefining Plan ; Bioenergy & Energy Alternatives Plan. External reviewer for 2009 five year plan, Fermentation Biotechnology Research Group

Development of courses and curriculum in a new (2013) Professional Science Master's Degree in Green Chemistry and Engineering. Developed new course as part of this program (Green Engineering Applications in Chemical Industries).

Collaborators (past 4 years)

Maria Coleman (University of Toledo), B. Leif Hanson (University of Toledo), Paul Langan (Oak Ridge National Laboratory), Marcel Lucas (Los Alamos National Laboratory), Mark Mason (University of Toledo), Jeffrey Mertens (USDA-ARS, Peoria), Timothy Mueser (University of Toledo), (Yoshiharu Nishiyama (University of Grenoble), Kirk D. Rector (Los Alamos National Laboratory), Donald Ronning (University of Toledo), Sasidhar Varanasi (University of Toledo), Greg L. Wagner (Los Alamos National Laboratory),

Graduate and Postdoctoral Advisors

Graduate Advisor: John M. Wiencek, Provost and Executive Vice President, University of Idaho, Moscow, Idaho.

Thesis Advisor and Postgraduate-Scholar Sponsor (past five years)

Doctoral Students: Samira Vasheghani Farahani (2016), Christopher Barr (University of Michigan), Indira Samayam (ioMosaic).

Masters Students: Hamed Hamden 2016-2017, Greg Avery 2015-2016, Joshua Wissinger (Engineering & Terminal Services).

Undergraduate Students: Oluwaseun Saka 2016, Mohammed Alabbad 2015, Abdullah Baawad 2015, Jessica Roggenbuck 2014, Elyssa Knotts 2014, Andrew Westerfeld 2013-2014, Kangsu Wang 2014, Michael Mayer 2010-2012, Amanda Fischbach 2012, Brendan Campana 2012, Lauren Elmy 2012, Grace Perrotta 2012, Kevin Click 2011.