Curriculum Vitae **Klavs F. Jensen**

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Birth date: Aug 5, 1952

Education:

1980	Ph.D. (Chemical Engineering), University of Wisconsin - Madison
1976	M.Sc. (Chemical Engineering), Technical University of Denmark

Employment:

2015-	Warren K. Lewis Professor, Chemical Engineering, Massachusetts Institute of Technology
2007-2015	Warren K. Lewis Professor and Department Head, Chemical Engineering, Massachusetts Institute of Technology
1996 - 07	Lammot du Pont Professor of Chemical Engineering
1989 - 94	Joseph R. Mares Career Development Chair in Chemical Engineering
1989 -	Professor of Materials Science and Engineering, Massachusetts Institute of Technology
1988-89	Professor, Department of Chemical Engineering and Materials Science, University of Minnesota
1986-89	Fellow, Minnesota Supercomputer Institute
1984-88	Associate Professor, Department of Chemical Engineering and Materials Science, University of Minnesota
1980-84	Assistant Professor, Department of Chemical Engineering and Materials Science, University of Minnesota
1976-80	Research and Teaching Assistant, Department of Chemical Engineering, University of Wisconsin - Madison

Honors:

2012	First recipient of the International Union of Pure and Applied Chemistry (IUPAC)-ThalesNano Prize in Flow Chemistry
2011	William H. Walker Award, American Institute of Chemical Engineers
2011	Knight of the order of “Dannebrogsordenen”
2009	Fellow American Institute of Chemical Engineers
2008	Named one of the "One Hundred Chemical Engineers of the Modern Era" as part of the American Institute of Chemical Engineers Centennial
2008	Member of American Academy of Arts and Sciences
2007	Fellow American Association for the Advancement of Science
2006	Honorary Doctorate *(Doctor Technices Honoris Causa*) Technical University of Denmark
2004	Fellow of the Royal Society of Chemistry, London

2002 Member of National Academy of Engineering
2000 R. H. Wilhem Award, American Institute of Chemical Engineers
1995 Charles M.A. Stine Award of the Materials Engineering and Sciences Division, American Institute of Chemical Engineers
1987 Allan P. Colburn Award, American Institute of Chemical Engineers
1987 John Simon Guggenheim Fellowship
1985-90 Camille and Henry Dreyfus Teacher - Scholar
1984-89 Presidential Young Investigator Award, National Science Foundation
1984 Young Chemical Engineer of the Year, AIChE Twin City Section
1983 Young Author's Award, Electrochemical Society
1982 Shell Faculty Career Initiation Award
1981 Outstanding Junior Faculty Award, ARCO Oil and Gas Company

Lectureships

2015 Bruce A. Finlayson Lecture, University of Washington, Seattle
2014 Jacobus van 't Hoff Lecture, Technical University Delft, The Netherlands
2014 ExxonMobil Lecture, University of Massachusetts, Amherst
2013 Schlumberger Lecture, University of Alberta, Canada
2012 Richard H. Wilhelm Lectures, Princeton University
2012 Distinguished McFerrin Lecturer, Texas A&M University
2011 Robert Pigford Lecture, University of Delaware
2010 Ashton Cary Lectures, Georgia Institute of Technology
2010 Basore Distinguished Lecturer, Auburn University
2007 Inaugural Jeanne and Martin Sussman Lecture in Chemical and Biological Engineering, Tufts University
2007 Ashland Distinguish Lecturer, University of Kentucky
2007 Bergveld Lecture, Twente University, The Netherlands
2005 Adams Distinguished Lecture, Purdue University
2005 Distinguish Lindsay Lecturer, Texas A&M University
2003 Julian C. Smith Lectureship, Cornell, Ithaca, NY
2003 William N. Lacey Lectureship, California Institute of Technology, Pasadena
2002 Ralph Peck Memorial Lecture, Illinois Institute of Technology, Chicago
2002 Bird, Stewart and Lightfoot Lecture, University of Wisconsin
2002 Donald L. Katz Lecture, University of Michigan
2002 L.K. Doraiswamy Lecture, National Chemical Laboratory, India and Iowa State University
2000 Berkeley Lecturer, Department of Chemical Engineering, UC Berkeley

Recent Professional Activities:

2015 Member External Review Committee, Department of Chemical Engineering, Northwestern University
2014-15 Chair Chemical Engineering Section of the National Academy of Engineering
2014- Member of the scientific advisory board Firefly Chemistry
2013 Member External Review Committee, Department of Chemical Engineering, University of California, Berkeley

2013-	Founder and member of the board SQZ Biotech
2011	Member of the Graduate Program Review Committee, North Carolina State University
2010	Member External Review Committee, Department of Chemical Engineering, Stanford University
2010-	Member External Advisory Council, Department of Chemical and Biomolecular Engineering, Korean Advanced Institute of Science and Technology
2009-	Member Advisory Council for the Department of Chemical Engineering, Princeton University
2009-	Member of the Board of Governors of the Technical University of Denmark
2007	Chair of the international evaluation committee Chemical Engn., Technical University of Denmark
2007-	Visiting Committee, Chemical Engineering, University of Wisconsin
2013	Evaluation committee, Chemical Engineering, University of California, Berkeley
2006-09	Advisory panel– Danish Ministry of Science, Technology and Innovation
2005-	Founding member of Chemical and Biological Microsystems Society (sponsors the International conferences on Miniaturized Systems for Chemistry and Life Sciences, μTAS)
2005	Conference Chair for the Ninth International conference on Miniaturized Systems for Chemistry and Life Sciences
2005	International Evaluation Committee for the Danish National Laboratory Risø
2004	Member of evaluation committee of research profile of Technical University Eindhoven
2004-	Scientific Advisory Board for the A*STAR Institute for Bioengineering and Nanotechnology, Singapore

Recent MIT Service:

2011- 15	Chair, School of Engineering Committee on Diversity
2009 -10	Co-chair MIT Institute-Wide Planning Task Force: Revenue Enhancement Working Group
2008-10	Committees on education, engineering - life science interface, and materials science infrastructure
2007-15	Department Head Chemical Engineering
2007-15	School of Engineering Council
2005-07	Faculty Policy Committee

Memberships in Professional Societies:

American Association for the Advancement of Science (Fellow)
American Institute of Chemical Engineers (Felllow)
American Chemical Society
Electrochemical Society
Materials Research Society
Royal Society of Chemistry (Fellow)
Society of Industrial Applied Mathematics

Teaching and Research Interests:

Research interests revolve around microfabrication, testing, integration and scale-up of microfluidic systems for chemical and biochemical discovery, synthesis and processing. Chemical kinetics and transport phenomena related to processing of organic and inorganic materials for electronic and optical applications are also topics of interest along with development of simulation approaches for reactive systems, specifically simulation across multiple length and time scales.

Teaching interests include chemical reaction engineering, transport phenomena, fundamentals of microfluidics, and materials and processes relevant to micro and nano fabrication.

Current Students, Postdocs, and Research Associates

PhD Students**:** Kosi Aroh, Connor Coley, Marcella Lusardi, Yiming Mo, Brandon Reizman, Isaac Roes, Tatyana Shatova, Weitong (Victoria) Su, Nopphon Weeranoppanant, Lisi Xie, Lu Yang.
Postdocs: Lazzari Stefano, Hongkun Lin, Milad Albolhasani, Xioyun Ding, Gaurav Giri, Kyoungmi Lee, Maryam Peer, Fumihio Sassa, Saurabh Shahane, Yanxiang Shi, Martin Stewart, Andrew Teixeira, Yanjie Zhang and Cuixian Yang.

Visiting students: Thilo Kögl (TU Munich)

Research Associate: Andrea Adamo

Past Students, Postdocs, and Visitors

PhD Students: Wen-Hsuan (Jen) Lee, María José Nieves, Everett O'Neal, Patrick Heider, Armon Sharei, Jason Moore, Jinyoung Baek, EthelMae Victoria Dydek, Kevin Nagy, Jaroslav Keybl, Chris Marton, Jonathan McMullen, Mahmooda Sultana, Nikolay Zaborenko, Ling Chao, Hemantkumar Sahoo, Linlin Ye, Jane Rempel, Jacob Albrecht, Brandon Blackwell, Saif Khan, Jason Kralj, Ole M. Nielsen, Edward R. Murphy, Brian K. Yen, Zhiyu "Ben" Zhang, Thomas Gervais, Andrea Zanzotto, Nuria de Mas, Leonel Arana, Hang Lu, Sameer K. Ajmera, Gwang-Soo Kim, Jinwook Lee, Maria A. Nemirovskaya, Samara L. Firebaugh, Chris Vineis, Tamara M. Floyd, Jason R. Heine, Matthew W. Losey, Seth Thomas Rodgers, Rajesh Venkataramani, Theodoros Mihopoulos, Kathleen M. Vaeth, Brian G. Willis, Suman K. Banerjee, I-Ming Hsing, Harsano S. Simka, Ravi Srinivasan, Jeffrey P. Hebb, Brian H. Cumpston, Shih-Tung Ngiam, Michal Danek, Jeung-Soo Huh, Sateria Salim, Tushar P. Merchant, Daniel G. Coronell, Jaesung Han, Kwok-Lun Ho, (Univ. Minnesota) Erik Oddmund Einset, Jihperng Leu, Rajesh R. Melkote, Sadavisan Shankar, Donald R. McKenna, James B. Planeaux, Harry K. Moffat, Peter E. Price Jr., Mark F. Ellis, Dimitrios I. Fotiadis, Manoj Dalvie, Konstantinos P. Giapis, Thomas R. Omstead, David C. Skouby, Peter Wai-Man Lee, Victor Gonzalez, Karl F. Roenigk, Mark D. Foster, David B. Graves, Sebastian Reyes

M.Sc. Students: Ylva Olsson, Jacqueline T. Underberg, Samuel B. Schaevitz, Douglas S. Fong, Michael Z. Gu, Kim-Marie Levis, , Lawrence J. Foley, Brad Houston, (Univ. Minnesota) , Dimitious Vlachos, Simon Brandon,Anthony M. Kremer, Carl Allen Houtman, Thomas P. Kempf, Devesh Kapur, Harald C.Lyche, Charles W. Plumb,

Postdocs: Baris Unal, Stephen Born, Steve Newman, Armon Sharei, Mohsen Behnam, Jean Christophe Monbaliu, Ulrich Neuenschwander, Seung Kon Lee, Sidy Ndao, Simon Kuhn,

Patrick Bazinet, Anand Kumar, Xiaoying Liu, Damien Webb, Lei Gu, Victor Sebastian Cabeza, Woo Young Sim, Chris Smith, Soubir Basak ,Ketan Pimparkar, Ryan Hartman, Jian Wen, Bernard Yen, Samuel Marre, Kishori Deshpande, Jamil El-Ali, Axel Günther, Hyun Goo Choi, Nuria De Mas, Yongbae Joen, Benjamin Wilhite, Nicolas Szita, Chelsey Baertsch, Carlo Cavalotti, Cyril Delattre, Rebecca Jackman, Constance Bauer, Ratna Shekhar, Istvan Lengyl, Javier Rodriguez-Viejo, Ajit Balakrishna, Charles Musgrave, XiaYong, Peter Futerko, Vernon Cole, Narasimha Acharya, Ming Xi, Karson Knutson, Chris Kleijn, Jiong-Ping Lu, Maurizio Masi, Kun-Ho Lie, Sanjay Patnaik, Ananth Annapragada, Lakis Mountziaris

Research Associates: Aleksander Franz

Visitors:

*Students:*Maud Fevre (Bordeaux), Gerrit Schatte (Munich), Alexander Woitalka (Munich), Alessandro Arione (EPFL), Flurin Hänseler (ETH), Norbert Heublein (Munich), Francesco Venturini (Milan), Lars Johansen (DTU), Ruud Brand (Delft), Nora Langhorst (Hannover), Maurizio Rondanini (Milan), Gian Caviezel (ETH), Veronique Gondoin (ETH), Ruben Kolfschoten (ETH), Nicolas Imlinger (Austria) , Gerardo Perozziello (DTU), Franz Trachsel (ETH), Martina Thalmann (ETH), Tobias Kraus (Munich), Jamil El-Ali (DTU), Uwe Hansen (Munich), Joost Driessen (Eindhoven), Ester Hurtos (Barcelona), Søren Eriksen (DTU), Tim Lund (Berlin)

Scientists: Mathiew Odijk (Twente), Thomas Gendrineau (Bordeaux), Amol Kulkarni (Indian Chemical Laboratory), Masay Hamano(Ono Pharmaceuticals),Kenichiro Hashimoto (Tokyo), Michiel Kreutzer (Delft),Elizabeth Podlaha-Murphy (Louisiana), Kunio Watanabe (Asahi Glass), Tomoya Inoue (Asahi Chemicals), Yasuhiro Wada (Misubishi), Shinji Isogai (Misubishi), Masanobu Ichida (Misubishi),Shige Kieda (Hitachi)

Bibliography

Edited Volumes

1. *Supercomputer Research in Chemistry and Chemical Engineering,* K.F. Jensen and D.G. Truhlar (Eds.), ACS Symposium Series **353** (1987).
2. *Microelectronics Processing: Chemical Engineering Aspects,* D.W. Hess and K.F. Jensen (Eds.), Advances in Chemistry Series **221** (1989).
3. *Chemical Perspectives of Microelectronic Materials II,* L.V. Interrante, K.F. Jensen, L.H. Dubois, and M.E. Gross (Eds.), *Mater. Res. Soc. Symp.* **204** (1991).
4. *Chemical Vapor Deposition—Principles and Application,* M.L. Hitchman and K.F. Jensen, (Eds.) Academic Press, (1993)
5. *Electronic Packaging Materials Science VII*. P. Børgesen, K.F. Jensen, R.A. Pollack (Eds.) *Mater. Res. Soc. Symp.* **323** (1994)
6. *μTAS 2003 – Seventh International Conference on Miniaturized Systems for Chemistry and Life Sciences*, M.A. Northrup, K.F. Jensen, and D.J. Harrison (Eds.), Transducers Research Foundation (2003)

7. *μTAS 2004 -Eight International Conference on Miniaturized Systems for Chemistry and Life Sciences*, T. Laurell, J. Nielson, J. Kutter, K.F. Jensen, and D.J. Harrison (Eds.) Royal Society of Chemistry (2004)
8. *μTAS 2005 -Ninth International Conference on Miniaturized Systems for Chemistry and Life Sciences*, K.F. Jensen, J. Han, D.J. Harrison, and J. Voldman, Transducers Research Foundation (2005).

Refereed Journals and Book Chapters

1. T.S. Sørensen and K.F. Jensen, "Formation of electric triple layers by interdiffusion of two electrolytes," *Faraday Trans.* **71**, 1805-1811 (1975).
2. H. Livbjerg, K.F. Jensen, and J. Villadsen, "Sulfur-dioxide oxidation on supported molten V_2O_5-$K_2S_2O_7$ catalyst - influence of liquid diffusion resistance," Journal of Catalysis **45,** 216-230 (1976).
3. K.F. Jensen and W.H. Ray, "A new view of ignition, extinction, and oscillations on supported metal catalyst surfaces," *Chem. Eng. Sci.* **35**, 241-248 (1980).
4. K.F. Jensen and W.H. Ray, "A microscopic model for catalytic surfaces. I. Catalytic wires and gauzes," *Chem. Eng. Sci.* **35**, 2439-2457 (1980).
5. K.F. Jensen and W.H. Ray, "The bifurcation behavior of tubular reactors," *Chem. Eng. Sci.* **37**, 199-222 (1982).
6. K.F. Jensen and W.H. Ray, "A microscopic model for catalytic surfaces. II. Supported catalysts," *Chem. Eng. Sci.* **37**, 1387-1410 (1982).
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11. H. Lau, J. Alvarez and K.F. Jensen, "Synthesis of control structures by singular value analysis. Dynamic measures of sensitivity and interaction," *AIChE J.* **31**(13), 427-439 (1985).
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13. K.F. Roenigk and K.F. Jensen, "Analysis of multicomponent LPCVD processes," *J. Electrochem. Soc.* **132** (2), 448-454 (1985).
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16. S. Reyes and K.F. Jensen, "Percolation concepts in modelling of gas-solid reactions. II. Application to char gasification in the diffusion regime," *Chem. Eng. Sci.* **41**(2), 345-354 (1986).

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18. J.B. Planeaux and K.F. Jensen, "Bifurcation phenomena in CSTR dynamics I. A system with extraneous thermal capacitance," *Chem. Eng. Sci.* **41**(6), 1497-1523 (1986).

19. D.W. Hess, K.F. Jensen and T. Anderson, "Chemical vapor deposition—-A chemical engineering perspective," *Reviews in Chemical Engineering* **3**, 97-186 (1985).

20. C. Houtman, D.B. Graves and K.F. Jensen, "CVD in stagnation point flow—-An evaluation of the classical 1D treatment," *J. Electrochem. Soc.* **133**(5), 961-970 (1986).

21. K.F. Jensen, "Micro-reaction engineering: Applications of reaction engineering to processing of electronic and photonic materials," *Chem. Eng. Sci.* **42**(5), 923-958 (1987).

22. M. Dalvie, K.F. Jensen and D.B. Graves, "Modeling of reactors for plasma processing I. Silicon etching by CF_4 in a radial flow reactor," *Chem. Eng. Sci.* **41**(4), 653-660 (1986).

23. H.K. Moffat and K.F. Jensen, "Complex flow phenomena in MOCVD reactors. I. Horizontal reactors," *J. Crystal Growth* **77**(1-3), 108-119 (1986).

24. P.W. Lee, D.R. McKenna, D. Kapur and K.F. Jensen, "MOCVD in inverted stagnation point flow: I. Deposition of GaAs from TMGa and TMAs," *J. Crystal Growth* **77**, 120-127 (1986).

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26. K.F. Jensen, H.K. Moffat and K.F. Roenigk, "Chemical vapor deposition of silicon—Transport phenomena and growth models," in *Processing of Electronic Materials*, C.G. Law and R. Pollard (Eds.), American Institute of Chemical Engineers, New York, 41-61 (1987).

27. S. Reyes and K.F. Jensen, "Percolation concepts in modelling of gas-solid reactions III—-Application to sulfation of calcined limestone," *Chem. Eng. Sci.* **42**(3), 565-574 (1987).

28. T.W. Taylor, V. Gonzalez and K.F. Jensen, "Modelling and control of the molecular weight distribution in methyl methacrylate polymerization," in *Polymer Reaction Engineering*, High Conversion Polymerization and Polycondensation, K.H. Reichert and W. Geisleler (Eds.), Huthig and Wepf, Verlag, New York, pp. 261-273 (1986).

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30. K.F. Roenigk, K.F. Jensen and R.W. Carr, "Rice-Ramsperger-Kassel-Marcus theoretical prediction of high-pressure Arrhenius parameters by nonlinear regression, I," *J. Phys. Chem.* **91**(22), 5726-5732 (1987).

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33. D.I. Fotiadis, A.M. Kremer, D.R. McKenna and K.F. Jensen, "Complex flow phenomena in vertical MOCVD reactors. Effects on deposition uniformity and interface abruptness," *J. Crystal Growth* **85**(1-2), 154-164 (1987).

34. D.C. Skouby and K.F. Jensen, "Modeling of pyrolytic laser-assisted chemical vapor deposition: Mass transfer and kinetic effects influencing the shape of the deposit," *J. Appl. Phys.* **63**(1), 198-206 (1988).

35. H.K. Moffat and K.F. Jensen, "Three-dimensional flow effects in silicon CVD in horizontal reactors," *J. Electrochem. Soc.* **135**(2), 459-471 (1988).

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37. M.F. Ellis, T.W. Taylor, K.F. Jensen and V. Gonzalez, "Estimation of the molecular weight distribution in batch polymerization," *Am. Inst. Chem. Eng. J.* **34**(8), 1341-1353 (1988).

38. D.W. Kisker, D.R. McKenna and K.F. Jensen, "Limitations to the OMVPE growth of Hg compounds due to hydrodynamic effects," *Materials Lett.* **6**(4), 123-128 (1988).

39. R.R. Melkote and K.F. Jensen, "Models for catalytic pore plugging, application to hydrodemetallation," *Chem. Eng. Sci.* **44**(13), 649-663 (1989).

40. R. Lückerath, P. Tommack, A. Hertling, H.J. Koss, P. Balk, K.F. Jensen and W. Richter, "Coherent anti-Stokes Raman Scattering *in situ* diagnostics in MOVPE. The thermal decomposition of AsH_3 and PH_3," *J. Crystal Growth* **93**(1-4), 151-158 (1988).

41. H.K. Moffat, T.F. Kuech, K.F. Jensen and P.J. Wang, "Gas phase and surface reactions in silicon doping of GaAs by silanes," *J. Crystal Growth* **93**(1-4), 594-601 (1988).

42. T.R. Omstead, P.M. Van Sickle, P.W. Lee and K.F. Jensen, "Gas phase and surface reactions in MOCVD of GaAs from triethylgallium, trimethylgallium and tertiarybutylarsine," *J. Crystal Growth* **93**(1-4), 20-28 (1988).

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44. J. Almlöff, D.G. Truhlar, H.T. Davis, K.F. Jensen, M. Tirrell and T. Lybrand, "Supercomputer chemistry at the University of Minnesota," *Int. J. Supercomp. Applic.* **2**(2), 5-15 (1988).

45. K.P. Giapis, D.C. Lu and K.F. Jensen, "High-quality epitaxial ZnSe and the relationship between electron mobility and photoluminescence characteristics," *Appl. Phys. Lett.* **54**(4), 353-355 (1989).

46. R. Lückerath, W. Richter and K.F. Jensen, "Gas-phase and surface effects in the thermal decomposition of AsH_3 and PH_3 studied by CARS," NATO Adv. Study Inst. (D. Cole-Hamilton and J.O. Williams, Eds). Series B: Physics **198** 157-167 (1989).

47. D.W. Hess and K.F. Jensen, "Microelectronics processing," in *Microelectronics Processing: Chemical Engineering Aspects*, D.W. Hess and K.F. Jensen (Eds.), Advances in Chemistry Series **221**, 1-33 (1989).

48. K.F. Jensen, "Chemical vapor deposition," in *Microelectronics Processing: Chemical Engineering Aspects*, D.W. Hess and K.F. Jensen (Eds.), Advances in Chemistry Series **221**, 199-264 (1989).

49. D.A. Bohling, G.T. Muhr, K.F. Jensen, T.R. Omstead and S. Brandon, "Recent advances in arsine substitutes," *Chemtronics* **4**, 26-30 (1989).

50. W.L. Gladfelter, D.C. Boyd and K.F. Jensen, "Trimethylamine complexes of alane as precursors for the low pressure chemical vapor deposition (LPCVD) of aluminum," *Chemistry of Materials* **1**(3), 339-343 (1989).

51. K.P. Giapis, K.F. Jensen, J.E. Potts and S.J. Pachuta, "Carbon incorporation in ZnSe grown by MOCVD," *Appl. Phys. Lett.* **55**(5), 463-465 (1989).

52. M.D. Foster and K.F. Jensen, "Interpreting scattering from random porous solids: A model of fully penetrable spherical voids," *J. Int. Coll. Sci.* **135**(1), 132-146 (1990).

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54. P.E. Price, Jr. and K.F. Jensen, "Multiplicities and periodic behavior in laser direct-write metallization," *Chem. Eng. Sci.* **44**(9),1879-1891 (1989).

55. K.F. Jensen, "Transport phenomena and chemical reaction issues in OMVPE of compound semiconductors," *J. Crystal Growth* **98**(1-2), 148-166 (1989).

56. D.I. Fotiadis, M. Boekholt, K.F. Jensen and W. Richter, "Flow and heat transfer in CVD reactors under a variety of operating conditions: *Comparison* of Raman temperature measurements and finite element predictions," *J. Crystal Growth* **100**(3), 577-599 (1990).

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59. M. Dalvie and K.F. Jensen, "Combined experimental and modeling study of spatial effects in plasma etching," *J. Electrochem. Soc.* **137**(4), 1062-1078 (1990).

60. M.D. Foster and K.F. Jensen, "SAXS investigation of model carbon pore structure and its change with gasification," *Carbon* **29**(2), 271-282 (1991).

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65. M. Dalvie and K.F. Jensen, "The importance of free radical recombination reactions in CF_4/O_2 plasma etching of silicon," *J. Vac. Sci. Technol.* B **3**, 1648-1653 (1990).

66. K.P. Giapis, K.F. Jensen, J.E. Potts and S.J. Pachuta, "Investigation of carbon incorporation in ZnSe: effects on morphology, electrical, and photoluminescence properties," *J. Electron. Mat.* **19**(5), 453-462 (1990).

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Invited Plenary and Keynote Lectures (past 10 years)

Conferences

1. LabAutomation, San Jose, CA, February 2004
2. Frontiers of Technology Forum, Industrial Research Institute, San Ramon, CA, March 2004
3. Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (PITTCON) Chicago, IL, March 2004
4. Dansk Kemiingeniør Konference (Danish Chemical Engineering Society), Lyngby, Denmark, May , 2004
5. Thermal Management for Micro Power Sources Workshop, Chicago, IL, May 2004
6. Labfusion, Boston, MA, June, 2004
7. Technische Universiteit Eindhoven, Eindhoven, The Netherlands, June 2004
8. 13th Annual Meeting of the Association of Crystallization Technology (ACT), North Chicago, October 2004
9. 4th Netherlands Process Technology Symposium (NPS4), Veldhoven, The Netherlands, October 2004
10. Annual Meeting of the American Institute of Chemical Engineers (AIChE), Austin, TX, November 2004
11. International Symposium on Micro/Nano Thermal and Fluids Systems, Tokyo, Japan, December 2004
12. 18th International Symposium on Microscale Separations and Analysis, New Orleans, February 2005
13. 19th North American Catalysis Society Meeting, Philadelphia, PA, May 2005

14. Biochemical Engineering XIV, Engineering Foundation Conference, Harrison Hot Springs, BC, Canada, July 2005
15. Third European Conference on Combinatorial Chemistry (EuroCombi 3), Winchester, UK, July 2005
16. Catalysis and Biocatalysis in Green Chemistry, Cambridge, UK, December 2005
17. MSB'2006 - 20th International Symposium on Micro-Scale BioSeparations, Amsterdam, January 2006
18. NanoBioSymposium at Nano Tech 2006 in Tokyo, Japan, February 2006
19. Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (PITTCON) Orlando, FL, March 2006
20. Symposium on Commercializing Academic Innovation, Chemical Heritage Foundation, Philadelphia, PA, March 2006
21. ACHEMA, Frankfurt, Germany, May 2006
22. International Symposium on Microchemistry and Microsystem, Hakone, Japan, June 2006
23. 17th International Congress of Chemical and Process Engineering ," Prague - Czech Republic, August 2006
24. New Avenues to Efficient Chemical Synthesis - Emerging Technologies, Schering Foundation, Berlin, August 2006
25. Microfluidics: A New Opportunity for Chemistry? l'Ecole Supérieure de Physique et de Chimie Industrielles, CNRS, Paris, France, November 2006
26. Microsystems for Flow Synthesis: Status and Opportunities, Center for Chemical Methodology and Library Development, 8th Annual Symposium, Boston June 2007
27. Manipulation of Colloids and Cells in Microfluidic Systems, Gordon Conference on Physics and Chemistry of Microfluidics, Waterville Valley, NH July 2007
28. Microsystems for Accelerating Chemical Synthesis and Biological Studies, 3rd International Conference on Bioengineering and Nanotechnology, Singapore August 2007
29. Chemical and Biological Microsystems for Discovery and Scaling to Production, First European Process Intensification Conference, Copenhagen, Denmark
30. Microfluidic Systems for Organic Chemical Reaction Engineering Synthesis, Invited lecture in Honor of 50 Years of Contributions of L.K. Doraiswamy, AIChE Annual Meeting, Utah, Nov 2007
31. Microfluidics Accelerating Chemical Synthesis, Microfluidics & Nanofluidics 2008, Cancun, Mexico, February 2008
32. Cell Signaling Studies Enabled by Microfluidic Systems, 22nd International Symposium on Micro-Scale BioSeparations, Berlin March, 2008
33. Microfluidic Synthesis of Nanostructures, 34th International Conference on Micro & Nano Engineering, Athens, Greece, September 2008.
34. Understanding Microreaction Systems through Rutherford Aris' Contributions to Reaction Engineering, AIChE Annual Meeting, Philadelphia, November 2008

35. Chemical And Biological Microsystems, Ichthyologists of Boston (local AIChE Section), December 2008

36. Accelerating Chemical and Biological R&D with Continuous Flow Microsystems, Opening Plenary Address, LabAutomation 2009, Palm Springs, January 2009

37. "Accelerating Chemical and Biological Studies with Continuous Flow Microsystems", Ontario a Chip Symposium, Toronto, Canada May 26, 2009

38. "Flow Chemistry in Green Chemistry", invited talk at the National American Chemical Society in special session on Green Chemistry: Research Advances and Funding Opportunities, Washington DC, September

39. "Microreactors in Discovery and Development: Status and Opportunities," Council for Chemical Research, 2009 New Industrial Chemistry and Engineering (NIChE) Conference, National Institute of Standards and Technology (NIST), Gaithersburg, MD, September

40. ACS ProSpectives: Process Chemistry in the Pharmaceutical Industry, Durham NC, November 2009

41. "Microfluidic Synthesis of Nano Materials at High Pressures and Temperatures," invited talk in honor of Professor James Wei at the Annual AIChE meeting, Nashville, TN, November 2009

42. "From Fuzzy Wires to Microsystems," invited talk in honor of the 70th Birthday of Professor W.H. Ray at the Annual AIChE meeting, Nashville, TN, November 2009

43. "Integrated Mini- and Micro-flow Systems for Chemical Synthesis and Separations,"16th International Process Development Conference (IPDC), Baltimore May 2010

44. "Molecular Engineering: Foundation for Chemical Engineering in the 21st Century," Danish Chemical Engineering Conference, Lyngby, June 2010

45. "Advances in Pharmaceutical Engineering as Applied to Continuous API Manufacturing – An Academic Perspective," AAPS Workshop: Advances and Opportunities in Drug Product Manufacturing - A Look at Continuous Manufacturing Process September 20 - 21, 2010 Baltimore, MD, September 2010

46. "Multistep flow chemistry in micro and meso scale reactors," RSC Symposium on Continuous Processing and Flow Chemistry, November 3-4, 2010, GlaxoSmithKline Stevenage, Herts, UK

47. "Multiphase Flow in Micro and Mini Reactors: Synthesis of Fine Chemicals and Nanoparticles," GSL10, 10th International Conf. Gas-Liquid-Solid Flows, Braga, Portugal June 2011

48. "Process intensification and greening with flow reactors", NSF Workshop on Sustainable Chemistry, Engineering, and Materials (SusChEM), Arlington, VA, Jan 2012

49. "Fundamental concepts in and applications of flow reactors", **Plenary** - 12th International Conference on Microreaction Technology, Lyon, France, Feb 2012

50. "Flow chemistry: optimization, scaling, and applications, **IUPAC Award Plenary**", 2nd International Conference of the Flow Chemistry Society, Munich, Germany, March 2012

51. K.F. Jensen, "Optimization and scale-up of flow chemistry processes", **Plenary** - Flow Chemistry Society Congress, Boston, April 2012

52. "Advances in Pharmaceutical Engineering as Applied to Continuous API Manufacturing- An Academic Perspective", International Association for Pharmaceutical Technology, Graz, Austria, September 2012

53. J. Baek, V. Sebastian Cabeza, S.-K. Lee, M.G. Bawendi, and K.F. Jensen, "Continuous synthesis of nano structures," Annual AIChE meeting, Pittsburg, November 2012.

54. "Cytosolic delivery of macromolecules by rapid mechanical deformation," 1st IBN International Symposium on Nanosystems for Biomedical Applications, Keynote, Singapore Jan 2013

55. "Integrating and scaling multistep flow chemistry", Keynote - Flow Chemistry Society Congress, Boston, May 2013

56. "Microreactors in Discovery and Development", Plenary, Process on a Chip Symposium, Dutch National Science Foundation, Eindhoven, The Netherlands, May 2013

57. "Micro reaction technology for catalysis – design, optimization, and simulation," Plenary Topsøe Catalysis Forum, Modeling and Simulation of Heterogeneous Catalytic Processes, Munkerupgaard, Denmark, "August 2013\

58. Flow Chemistry: Process Integration and optimization,"4th Conference on Frontiers in Organic Synthesis Technology, Keynote, Budapest, Hungary, October, 2013.

59. "Microsystems for Discovery and Development Next Steps," invited, Annual AIChE meeting, San Francisco, CA, November 2013.

60. "Small scale systems for materials synthesis and catalyst characterization," invited, Annual AIChE meeting, San Francisco, CA, November 2013.

61. "Homogeneous and Heterogeneous Catalysis in Micro- and Mini-Flow Reactors," 25th Organic Reactions Catalysis Society meeting, Tucson, AZ, March 2014

62. "Developing and Scaling Multistep Flow Chemistry," Keynote - Flow Chemistry Society Congress, Boston, MA, April 2014.

63. "Synthesis of Nano-Structures in Flow," Keynote – 13th International Conference on Microreaction Technology, Budapest, Hungary, June 2014.

64. "Chemical and Biological Microsystems Advantages of going small," Pleanry - World Lecture Series, Shinkawasaki, Japan, August 2014

65. "Microfluidics – Intensification," Keynote - Sustainable Chemistry and Engineering School, Bordeaux, France, October 2014

66. "Chemical and Biological Microsystems Advantages of going small," Plenary - Annual meeting of the Pierre-Gilles de Gennes Institute for microfluidics, Paris, France, November 2014

67. "Flow chemistry miniaturization and optimization." ACS National Meeting, March 2015, Denver, Colorado

Universities:

1. Department of Chemical Engineering, University of Toronto, Canada, February 2004.
2. Department of Electrical Engineering, Lund Technical University, Lund, Sweden, April 2004

3. Applied Physics and Chemical Engineering, Delft University, Delft, The Netherlands, October 2004
4. Department of Chemical Engineering, Princeton University, NJ, November 2004
5. Distinguished Lindsay Lecturer, Department of Chemical Engineering, Texas A&M, College Station, April 2005
6. Adams Distinguished Lecture, Department of Mechanical Engineering, Purdue University, Lafayette, IN, September 2005
7. Department of Chemistry, Nagoya University, Japan, Feb.2006
8. Department of Chemical Engineering, UC Riverside, CA, March 2006
9. University of Texas, Austin, TX , April 2006
10. Department of Chemical Engineering, Danish Technical University, Lyngby, April 2006
11. Leermakers Symposium, Wesleyan University, Middleton, CN, May 2006
12. Symposium for John Villadsen, Danish Technical University, Lyngby, Denmark, June 2006
13. Department of Chemical Engineering, Rensselaer Polytechnic Institute, September 2006
14. Department of Chemical Engineering, National University of Singapore, August 2007
15. BIOS-MESA+, Twente University, The Netherlands (Bergveld Lecture), September 2007
16. Department of Chemical Engineering, University of Kentucky, Lexington KY, October 2007
17. Department of Chemical Engineering, Tufts University, Medford, December 2007
18. Department of Process Technology, ETH, Zurich, March 2008
19. Department of Chemical Engineering, UC Berkeley, May 2008
20. Department of Chemical Engineering, University of Minnesota, March 2009
21. Center for Engineering in Medicine and Surgical Services at Massachusetts General Hospital
22. UCLA California NanoSystems Institute, January 2010
23. Department of Chemical Engineering, Auburn University, March 2010
24. Department of Chemical Engineering, UC Santa Barbara, March 2010
25. Department of Chemical Engineering, Gary Lectures, Georgia Tech, April 2010
26. Department of Chemical Engineering, Imperial College, February 2011
27. Department of Chemical Engineering, University of Delaware, Pigford Lecture, September 2011
28. Department of Chemistry and Chemical Engineering, ETH Zurich, November 2011
29. Department of Chemical Engineering, Columbia University, December 2011
30. Department of Chemical Engineering, Texas A&M University, McFerrin Lecture, September 2012
31. Department of Chemical Engineering, Princeton University, R.H. Wilhelm Lectures, October 2012.

32. “Synthesis on demand - on your desktop,” Department of Chemical Engineering, University of Alberta, Schlumberger Lecture, Oct 2013.
33. “ Chemical and Biological Microsystems: Advantages of going small,” Advanced Study Institute, Hong Kong University of Science and Technology, January 2014
34. “ Chemical and Biological Microsystems: Advantages of going small,” Department of Chemical Engineering, National Taiwan University, Taipei, January 2014
35. “ Shrinking and Accelerating the Lab: Microreactors in Discovery and Development,” Department of Chemical Engineering, Univ. Massachusetts, ExxonMobil Lecture, Amherst, MA, April 2014
36. “Fluid flow, reactions, and cells in microfluidic systems,” Tokyo University Graduate School, Tokyo, Japan, July 2014
37. “Applications of Chemical and Biological Microsystems,” Tokyo University Graduate School, Tokyo, Japan, July 2014.
38. “Synthesis of Nanoparticles in Microfluidic Systems,” Institut de Chimie de la Matière Condensée de Bordeaux CNRS, University of Bordeaux, France, October 2014.
39. “Flow chemistry: Development, Optimization, and Scaling,” Technical University of Delft, Jacobus van 't Hoff Lecture, Delft, The Netherlands, November 2014.

Companies and Government Laboratories:

1. Merck, Rahway, NJ, June 2004
2. Schering, Berlin, Germany, August 2004
3. Wacker, Munich, Germany, August 2004
4. Merck, Darmstadt, Germany, September 2004
5. National Institute of Standards and Technology, Gaithersburg, MD, October 2005
6. Pfizer, Research Technology Center, Cambridge, MA, December 2005
7. Ebara Corporation, Tokyo, Japan, February 2006
8. NIH-NHLBI & NIMH, Bethesda, Maryland, March 2006
9. Dow Corning, Midland, Michigan, January 2008
10. Arkema, King of Prussia, Pennsylvania, April 2008
11. Eli Lilly, Indianapolis, Indiana, September 2008
12. Merck, Rahway, December, 2009
13. Novartis, Basel, January 2010
14. BP, Sunbury London, January 2010
15. FDA, Internal Workshop on Continuous Manufacturing, March 2010
16. ENI, Milan, June 2010
17. Xerox Distinguished Lecture Series, Missisauga, Ontario, October 2010

18. Eli Lilly, Indianapolis, Indiana, February 2011
19. Novartis, Basel, Switzerland, October 2011
20. Bristol-Myers Squibb, Green Chemistry Symposium, New Brunswick, New Jersey, August 2012
21. AbbVie, “Flow Chemistry: Applications, Optimization and Scaling,” Chicago, Illinois, October 2013
22. Corning Reactor Annual Technology Conference Shanghai, China, March, 2014
23. SK Life Science 1st Annual Continuous Process Symposium, The future of pharmaceutical development, Newark, NJ, May 2014