

Christopher J. Durning
Professor

Education:

B.S., Chemical Engineering; Columbia University, May 1978
M.A., Chemical Engineering; Princeton University, Oct. 1979
Ph.D., Chemical Engineering; Princeton University, June 1983

Service at Columbia University:

Years of Service: 35
01/83, Initial Appointment, Lecturer
07/83, First Promotion, Assistant Professor
07/88, Second Promotion, Associate Professor
07/98, Third Promotion, Professor
01/03-07/03, Acting Chairman
07/03-07/05, Vice-Chairman

Related Experience:

07/01/13-12/31/13, Visiting Senior Fellow, Institute for Advanced Studies, University of Bologna, Bologna Italy.
01/01/06 - 6/30/06, Visiting Lecturer, Mathematics Department, Vancouver Island University, BC Canada
09/01/97 - 12/31/97, Visiting Scientist, Institute of Materials Science, University of Connecticut
01/01/97 - 08/31/97, Visiting Staff Member, Manuel Lujan Jr. Neutron Scattering Center, Los Alamos National Lab
09/01/93 - 01/15/94, Visiting Professor, Department of Chemical Engineering and Materials Science, University of Minnesota
09/01/92 - 01/30/93, Visiting Professor, Department of Applied Mathematics, California Institute of Technology
05/01/91- 06/30/91, Visiting Professor, Department of Chemical Engineering, University of Sherbrooke; Sherbrooke, Canada
Summer 1990, Visiting Scientist, Scientific Research Laboratories, Ford Motor Co., Dearborn MI
Summer 1988, Visiting Scientist; Packaging Technology Group, T.J. Watson Research Center, IBM Corporation, Yorktown Heights NY
10/1/88 - 12/31/91, Research Associate; Textile Research Institute, Princeton NJ
Summer 1986, Visiting Professor; Polymer Processing & Compounding Group, Experimental Station, E.I. duPont deNemours & Co. Inc., Wilmington DE
Summer 1984, Visiting Professor; Engineering Technology Laboratory, Experimental Station, E.I. duPont deNemours & Co. Inc., Wilmington DE

Recent Peer-Reviewed Publications: (78 total)

- A. Muller, T., Yablon, D. G., Karcher, R., Knapp, D., Kleinman, M. H., Fang, H. B., Durning, C. J., Tomalia, D. A., Turro, N. J., Flynn, G. W. (2002). AFM Studies of high-Generation PAMAM Dendrimers at the Liquid/Solid Interface. *Langmuir*, 18(20), 7452-7455.
- B. Liu, Z., Pappacena, K., Cerise, J., Durning, C. J., Kim, J., O'Shaughnessy, B., Levicky, R. (2002). Organization of Nanoparticles On Soft Polymer Surfaces. *Nano Letters*, 2(3), 219-224.
- C. Janes, D. W., Durning, C. J., van Pel, D. M., Lynch, M. S., Gill, C. G., Krogh, E. T. (2008). Modeling Analyte Permeation in Cylindrical Hollow Fiber Membrane Introduction Mass Spectrometry. *Journal of Membrane Science*, 325(1), 81-91.
- D. Janes, D. W., Moll, J. F., Harton, S. E., Durning, C. J. (2011). [Dispersion Morphology of Poly\(methyl acrylate\)/Silica Nanocomposites](#). *Macromolecules*, 44(12), 4920-4927.
- E. Janes, D. W.; Durning, C. J. (2013). Sorption and Diffusion of n-Alkyl Acetates in Poly(methyl acrylate)/Silica Nanocomposites. *Macromolecules*, 46 (3), 856-866.
- F. Janes, D. W., Kim, J.S., Durning, C. J. (2013). Interval Sorption of Alkyl Acetates and Benzenes in Poly(Methyl Acrylate). *Industrial & Engineering Chemistry Research*, Special Issue in Honor of Prof. G. Sarti, 52, 8765-8773.
- G. Escobar-Ferrand, L., Li, D., Lee, D., Durning, C. J. (2014). All-Nanoparticle Layer by Layer Surface Modification of Micro and Ultrafiltration Membranes. *Langmuir*, 30, 5545 (2014).
- H. Doghieri, F.; Minelli, M.; Durning, C. J. (2016). Non-equilibrium thermodynamics of glassy polymers: Use of equations of state to predict gas solubility and heat capacity. *Fluid Phase Equilibria*, 417, 144-157.
- I. Janes, D. W.; Bilchak, C.; Durning, C.J. (2017). Decoupling energetic modifications to diffusion from free volume in polymer/nanoparticle composites. *Soft Matter*, 13, 677-685.
- J. Bilchak, C.R., Buenning, E., et al. including Durning, C.J. (2017). Polymer-grafted Nanoparticle Membranes with

Controllable Free Volume. *Macromolecules*, 50, 7111-7120.

Professional Societies: American Institute of Chemical Engineers, American Chemical Society, Materials Research Society, American Physical Society, Society of Rheology.

Institutional Service

2001-2013, Chair Undergraduate Committee

2013 – present, member Undergraduate Committee

2001-present, Undergraduate advisor, Chemical Engineering

2003-present, 7x Ad-hoc Tenure Review committees

Professional Service (2002-present)

peer-reviewer for seven major technical publications; referee for beam-time proposals to NIST and LANL neutron scattering facilities; peer-reviewer for NSF, ACS-PRF and DOE grant proposals