

**Dr. Douglas W. Bousfield**  
Professor  
Department of Chemical and Biological Engineering  
University of Maine  
Orono, Maine 04469  
(207) 581-2300  
bousfld@maine.maine.edu

**Professional Preparation:**

Montana State University, B.S. Chemical Engineering, 1981  
Oregon State University, M.S. Chemical Engineering, 1983  
University of California, Berkeley, Ph.D., 1986

**Appointments:**

Professor of Chemical Engineering, University of Maine (1998 – present)  
Associate Professor of Chemical Engineering, University of Maine (1992-1998)  
Assistant Professor of Chemical Engineering, University of Maine (1986-1992)  
Graduate Student Research Assistant, Lawrence Berkeley Laboratory (1983-1986)  
Research Assistant, Oakridge National Laboratory (Summer, 1981)

**Publications Most Closely Related to the Proposed Work:**

1. Toivakka MO, Bousfield DW. 2001. Modeling of coating layer mechanical properties. Proc. Advanced Coating Fundamentals Symposium, TAPPI Press, 293-328.
2. He P, Bitla S, Bousfield DW, Tripp CP. 2002. Raman spectroscopic analysis of paper coatings. Applied Spect. 56(9): 115-1121.
3. Xiang Y, Bousfield DW, Hayes PC, Kettle J. 2003 Effect of latex swelling on ink setting on coated paper. J. of Graphic Tech 1: 13-25.
4. Bousfield DW, Karles G. 2004. Penetration into three-dimensional porous structures. J. Colloid and Inter. Sci 270:396-405.
5. Ozaki Y, Bousfield DW, Shaler S. 2006. Three dimensional observation of coated paper by confocal laser scanning microscope. TAPPI J., 5(2): 3-8.

**Other Significant Publications:**

1. Xiang Y, Bousfield DW. 2002. Effect of ink emulsification on ink gloss dynamics. Nordic Pulp and Paper Res. J., 17(1): 61-66.
2. Paradis MA, Genco GM, Bousfield DW, Hassler JC, Wildfong V. 2003. Measurement of drainage under conditions of known shear rate. J. Pulp and Paper Sci., 29(12):395-400.
3. Al-Turaif H, Bousfield DW. 2003. The influence of substrate absorbency on surface energy of coatings. Prog. in Organic Coatings 49:62-69.
4. Vyörykkä J, Bousfield D, Vuorinen T. 2004. Confocal Raman Microscopy: A non-destructive method to analyse paper coating depth profiles. Nordic Pulp Paper Res. J., 19(2).
5. Jeon SJ, Bousfield DW. 2004. Print gloss development with controlled coating structures. J. Pulp and Paper Sci. 30(4): 99-104.

**Synergistic Activities:**

**Director of the Paper Surface Science Consortium:** Since 1996, I have been the Director of the University of Maine Paper Surface Science Program. An average of 16 companies have participated in this program to train graduate students and to conduct research in the area of paper coating, sizing and printing. Unique teams have developed that involve paper companies, suppliers, and graduate students.

**Novel Experimental Tools:** I have built a number of unique tools to measure interactions of fluids with porous surfaces. Some of these tools characterize the rate of ink setting, the local surface energy, and the local porosity.

**New Models of Industrial Processes:** Over the last several years, computer based models have been developed that describe various coating processes on porous webs. The absorption of fluid and the buildup of a filtercake are included in the models.

Dr. Douglas W. Bousfield  
Professor of Chemical and Biological Engineering  
University of Maine

**Collaborators:**

Al-Turaif, H., Professor, Saudi Arabia  
Brown, J., Rohm and Haas  
Donigian, D., Specialty Minerals  
Genco, J., University of Maine  
Hayes, P., BASF  
Jeon, Sung, Hansol Paper, Korea  
Karles, G., PM USA, VA, PA  
Kim, B.S., Hansol Paper, Korea  
Lepoutre, P., Montreal, Canada, retired  
Okamori, K., Nippon Paper, Japan  
Osgood, A., SAPPI  
Paraija, H., Finish Pulp and Paper Research Institute,  
Finland

Rigdahl, M., Chalmers University, Sweden  
Roper, J., Dow  
Shaler, S., University of Maine  
Toivakka, M., Finland  
Triantafillopolous, N., Omnova, Ohio  
Tripp, C., University of Maine  
Unertl, W., University of Maine  
van Heiningen, A., University of Maine  
Vuorinen, T., Helsinki University of Technology,  
Finland  
Vyörykkä, J., YKI, Stockholm, Sweden  
Wildfong, V., Johnson Foils  
Xiang, Y., Sappi

**Graduate and Postdoctoral Advisor:**

Prof. Morten Denn, City College, New York.

**Thesis Advisor and Postgraduate-Scholar Sponsor:**

Akinlik-Kocak, Sedef, student  
Bitla, Shivashanker, current student  
Bouchon, Martine, France  
Clark, Aaron, current student U. Maine  
Devishande, Suresh, France  
Dimetry, Basant, Georgia Pacific, Maine  
Ercan, Saybil, NIST, Colorado  
Eski, E., Katahdin Paper  
Giri, Manesh, HP, Corvallis, OR  
Guler, E., Katahdin Paper  
Hase, K., Los Alamos  
Iyer, Rajan, IMERYS  
Jeon, Sung Jai, Hansol Paper, Korea

Lewis, C., Kemira  
Johnson, Mitch, 3M Corp, St. Paul, MN  
Matthews, J., Katadin Paper  
Ninness, Brian, Spectral Solutions., Maine  
Raman, K., Katahdin Paper  
Ramagoli, G., Katahdin Paper  
Rioux, Ran  
Scheller, Brian, StoraEnso  
Shen, Yingfeng, KCL, Finland  
Shin, Jae, France  
Shirke, Amol, current student U. Maine  
Ziler, Z.

Total number of graduate students advised: 18 MS and 7 Ph.D.

Total number of postdoctoral scholars sponsored: 7

Total number of graduate students and postdoctoral scholars: 32