

DANIEL M. CASMIER

Intel Corporation
2501 NW 229th Ave
Mail Stop RA3-410
Hillsboro, OR 97124
(971)214-3614

5540 NE Hidden Creek Dr. #105
Hillsboro, OR 97124
(206)930-3564
daniel.m.casmier@intel.com

EDUCATION:

- 2004 Ph.D., Chemistry, University of Washington, Seattle, WA; Thesis Title: **Systematic Study of Thiazole Incorporated NLO Gradient Bridge Chromophores**; Advisor: Prof. Larry R. Dalton, GPA: 3.53
- 1999 B.S., Chemistry (*summa cum laude*), Pacific Lutheran University, Tacoma, WA; ACS certification; Thesis Title: **The Design and Performance of Cyclic Olefins in 193-nm Lithography**; Advisor: Dr. Robert Allen, GPA: 3.90

- SKILLS:**
- Proficient in organic synthetic chemistry with experience in monomer and polymer synthesis for various materials applications (electro-optic, photorefractive, electroluminescence)
 - Adept at operating numerous instruments including: FT-NMR, SEM, HPLC, GC-MS, FT-IR, UV-Vis, DSC, TGA, QCM, and Profilometer
 - Well versed in clean room (Class 10 and 100) environments for lithographic processing
 - Competent in using Microsoft Word, Excel, and PowerPoint for presentations and reports

RESEARCH EXPERIENCE:

- 2004-Present Senior Process Engineer, Intel Corporation, Hillsboro, OR.
-Involved in install/qualification of several 193-nm exposure tools
-Sustaining duties of 193-nm scanner/stepper manufacturing tools in latest chipset process
- 1999-2004 Graduate Assistant, University of Washington. Advisor: Prof. Larry R. Dalton
-Independently designed and synthesized novel thiazole-based NLO chromophores
-Patented a number of novel thienothiophene based chromophores
-Developed synthesis of fluorinated Frechet-type dendrimer for potential use in non-linear optical and organic amplifier applications
-Instructed General Chemistry discussion group and laboratory sections
- Summer 1998 Intern, IBM Almaden Research Center, San Jose, CA. Advisor: Dr. Robert Allen
-Synthesized various alternating copolymers for positive photoresist research
-Optimized conditions for new photoresist platform and its derivatives
-Evaluated strengths/weaknesses of a norbornene/maleic anhydride polymer system in 193-nm lithography
-Presented findings to Almaden lithography research team and recommended further research in system synthesis/properties
- 1998-1999 Undergraduate Organic Laboratory Grader, Pacific Lutheran University, Tacoma WA; Advisor: Prof. Craig Fryhle

-Graded approximately 20 weekly student laboratory reports

1996-1999 Chemistry Peer Tutor, Pacific Lutheran University, Tacoma WA; Advisor: Ms. Wanda Wentworth / Ms. Chris C. Benton
-Acquired Center for Reading and Learning Association (CRLA) national certification as tutor, 1996-1999

PUBLICATIONS:

Frequency-agile hyper-Rayleigh scattering studies of electro-optic chromophores. Firestone, K. A.; Lao, D. B.; Casmier, D. M.; Clot, O.; Dalton, L. R.; Reid, P. J. *Proc. SPIE-Int. Soc. Opt. Eng.* **2005** (in press).

New paradigm in NLO chromophore design through a gradient bridge concept. Casmier, D.M.; Sullivan, P.A.; Clot, O.; Firestone, K.A.; Eichinger, B.E.; Lee, S.; Heller, S.; Brumbaugh, A.; Millard, B.; Dalton, L.R. *Proc. SPIE-Int. Soc. Opt. Eng.* (in press).

Organic electro-optics: exploiting the best of electronics and photonics. Dalton, L.R.; Robinson, B.H.; Nielsen, R.; Jen, A.K.; Casmier, D.; Rabiei, P.; Steier, W.H. *Proc. SPIE-Int. Soc. Opt. Eng.* **2003**, 4991 (Organic Photonic Materials and Devices V), 508-519.

Approaches to etch-resistant 193-nm photoresists: performance and prospects. Allen, R.D.; Opitz, J.; Ito, H.; Wallow, T.I.; Casmier, D.M.; DiPietro, R.A.; Brock, P.J.; Breyta, G.; Sooriyakumaran, R.; Larson, C.E.; Hofer, D.C.; Varanasi, P.R.; Mewherter, A.M.; Jayaraman, S.; Vicari, R.; Rhodes, L.F.; Sun, S.; *Proc. SPIE-Int. Soc. Opt. Eng.* **1999**, 3678 (Pt. 1, Advances in Resist Technology and Processing XVI), 66-77.

Cyclic olefin resist polymers and polymerizations for improved etch resistance. Allen, R.D.; Opitz, J.; Ito, H.; Wallow, T.I.; Casmier, D.M.; Larson, C.E.; Sooriyakumaran, R.; Hofer, D. C.; Varanasi, P.R. *J. Photopolym. Sci. Technol.* **1999**, 12(3), 501-508.

PATENTS:

Hyperpolarizable organic chromophores. Dalton, L.R.; Jen, A.K.-Y.; Londergan, T.; Carlson, W.B.; Phelan, G.; Huang, D.; Casmier, D.; Ewy, T.; Buker, N.; PCT Int. Appl. **2002**, Pat#WO0208215, 104 pp.

PRESENTATIONS:

New paradigm in NLO chromophore design through a gradient bridge concept. Casmier, D.M.; Sullivan, P.A.; Clot, O.; Firestone, K.A.; Eichinger, B.E.; Lee, S.; Heller, S.; Brumbaugh, A.; Millard, B.; Dalton, L.R.; Photonics West, San Jose, CA, January 24-29, **2004**.

Nonlinear Optical Polymeric Materials; ACS Northwest Regional Meeting (NORM2002), Gonzana University, Spokane, WA, June 19-22, **2002**.

Design, synthesis, and NLO properties of chromophores modified with fluorinated dendrimers. Casmier, D.M.; Chai, Z.; Londergan, T.; Zhang, C.; Dalton, L.; 219th ACS National Meeting, San Francisco, CA, March 26-30, **2000**.

AWARDS:

International Society for Optical Engineering (SPIE) Scholarship (April 2002)
Ramstad Scholarship from Pacific Lutheran University, Department of Chemistry (June 1998)
Organic Chemistry award from Division of Polymer Chemistry of the ACS (May 1997)

AFFILIATIONS:

American Chemical Society (ACS) – *6 years*
International Society of Optical Engineers (SPIE) – *2 years*
Society on Information Display (SID) – *1 year*