CURRICULUM VITAE

Gary John Blanchard

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Marital Status: Married, two children

Date of Birth: 22 March, 1959, Berlin, New Hampshire, USA

Education:
B.S. (Chemistry), Bates College, 1981
Ph.D. (Chemistry), University of Wisconsin - Madison, 1985
Advisor: M. J. Wirth

Awards and Honors:
Eastern Analytical Symposium Student Award, 1980
ACS Analytical Division Summer Internship, 1980
Graduated with Honors (Chemistry) Bates College, 1981
DuPont Graduate Fellowship, 1983
National Science Foundation Special Creativity Extension, 1998-2000
Gold Medal Award of the NY Section of the Society for Applied Spectroscopy, 2011

Editorial / Advisory Positions:
Spectrochimica Acta A, Editorial Board
Open Journal of Materials Science, Editorial Board
Applied Spectroscopy, Book Review Editor
Workshop on Surface Modification for Chemical and Biochemical Sensing, International Advisory Board

Memberships:
American Chemical Society
Monmouth County NJ Local Section Chair – 1990
Michigan State University Local Section Chair – 2006
American Association for the Advancement of Science
Society for Applied Spectroscopy
International Society for Electrochemistry

Work Experience

2011 -	Adjunct Professor, Biosystems and Biomedical Engineering, Michigan State University, East Lansing, MI
2010 -	Associate Chair for Education, Department of Chemistry, Michigan State University, East Lansing, MI
2002 - 2010	Associate Chair for the Graduate Program, Department of Chemistry, Michigan State University, East Lansing, MI.
1999 - 2002	Director of Graduate Admissions, Department of Chemistry, Michigan State University, East Lansing, MI.
1999 - 2001	Associate Director, Center for Fundamental Materials Research, Michigan State University, East Lansing, MI.
1999 -	Professor, Department of Chemistry and Center for Fundamental Materials Research, Michigan State University, East Lansing, MI.
1995 - 1999	Associate Professor, Department of Chemistry and Center for Fundamental Materials Research, Michigan State University, East Lansing, MI.
1991 - 1995	Assistant Professor, Department of Chemistry and Center for Fundamental Materials Research, Michigan State University, East Lansing, MI.
1985 - 1991	Member of Technical Staff, Bell Communications Research, Red Bank, NJ.

Selected Accomplishments

Spectroscopy

- First experimental achievement of shot-noise limited sensitivity (10^5 molecule detection limit) with triple modulation pump-probe absorption spectroscopy.
- Development of ultrafast stimulated emission spectroscopy for the measurement of Stokes shift evolution and inhomogeneous relaxation kinetics.
- Development of a new technique for measuring vibrational lifetimes of organic solutes in the liquid phase.
- Elucidation of the mechanism of pyrene solvent polarity-dependent fluorescence response.

Interface Science

- First measurement of adsorption free energy and entropy for alkanethiol/gold self assembled monolayers.
- First measurements of motional dynamics within alkanethiol/gold and metal phosphonate monolayer structures.
- First determination of variation in silanol density and distribution with different types of SiO_x.
- Demonstration of oriented multilayers using asymmetric metal ion complexation chemistry.
- Demonstration of thermodynamic control over adsorption and desorption through nanometer adlayer deposition.

Conjugated Polymers

- First demonstration of electronic and phonon-mediated optical Stark effects in a conjugated polymer (with J. P. Heritage and G. L. Baker).
- First demonstration of enhanced optical nonlinearity in a conjugated polymer by vibrational combination band coupling to a vibronic state (with J. P. Heritage).
- Development of digital signal processing strategy for photonic switching applications of conjugated polymers.

Polar Solvation

- First clear measurement of state-dependent orientational relaxation. Elucidation of the site-specific molecular interaction producing this effect.
- First detection and quantitation of a solvent-excited solute complex.
- First demonstration of the role of counter-ions in ultrafast solvation dynamics.

Professional Service

- Member, NSF SBIR Review Panels, 1995, 1996.
- Member, Findeis Award Jury, 1995, 1996.
- Organizer - Keystone Conference on Reconnecting the Academic and Industrial Analytical Communities - an NSF-sponsored GOALI Workshop, 1996
- Member, NASA Environmental Health Review Panel, 1997. Panel Chair, 1998.
- Organizer - Molecular Spectroscopy, Materials and Interfaces Program, FACSS 1997, Providence, RI.
- Member, International Organizing Committee, Optical Society of America Fall 1997 Meeting, San Diego, CA
- Member, NSF-CCLI Review Panel, 1999.
- Organizer, Symposia on Polymer Characterization and Interface Characterization, ACS Fall 1999 National Meeting.
- Member, NASA Crystal Growth Review Panel, 2001.
- Discussion Leader, Gordon Conference on Analytical Chemistry, June, 2001.
- Member, ACS Award in Chemical Instrumentation Jury, 2001, 2002.
- Member, NIH Repairative Medicine Study Section, March, 2004
- Member, Scientific Committee, International Conference on Electode Processes, Szczyrk, Poland, September, 2004.
- International Member, SMCBS Steering Committee, 2009 – present
- Book Review Editor, Applied Spectroscopy, 2009 – present

Students Graduated

1993	Lee DeWitt (M)	Synergetica, Inc., Howell, MI
1995	Ying Jiang (D)	United Nations, Beijing, China
	Selezion A. Hambir (D)	Research Fellow, Beckman Institute, Univ. of Illinois
	Sandjaja Tjahajadiputra (M)	Guidant Corporation
1996	Jeffrey P. Rasimas (D)	Deceased
	David S. Karpovich (D)	H. H. Dow Professor, Saginaw Valley State University
	Patty K. McCarthy (D)	Staff Member, NIH
1998	Jennifer C. Horne (D)	Senior Scientist, Abbott Laboratories, Abbott Park, IL
2000	Wendy C. Flory (D)	Staff Scientist, Dow Chemical Company, Midland, MI
	Punit Kohli (D)	Associate Professor, Southern Illinois University
2001	Scott N. Goldie (D)	Senior Examiner, USFDA, Gaithersburg, MD
	Shawn M. Mehrens (M)	Staff Scientist, Pfizer Chemical Co., Groton, CT
	Joseph J. Tulock (D)	Lab Manager, Emergent Biosolutions, Lansing, MI
2002	Stephen B. Bakiamoh (D)	Research Scientist, Covance, Indianapolis, IN
	Jaycoda S. Major (D)	Staff Scientist, Morton Salt, Nassau, Bahamas
	John L. DelaCruz (D)	Lab Manager, Patheon Pharmaceuticals, Cincinnati, OH
	Lee Kelepouris (D)	Research Scientist, Sweden
2003	Alexis A. Blevins (M)	PhD Candidate, MSU (PhD 2007)
2004	Richard M. Bell (M)	Staff Scientist, Bristol-Myers Squibb, Syracuse, NY
	Alayna M. Goetsch (M)	State of Texas, Austin, TX
2005	Michelle C. Rini (D)	Lecturer, Community College, Houston, TX
2006	Sarah A. Stevenson (D)	Research Analyst, CNA, Alexandria, VA
2007	Janelle D. S. Newman (D)	Midwest Research Institute
	Kelly M. Greenough (D)	Pendleton, OR
	Alexis A. Blevins (D)	Staff Scientist, BASF, Wyandotte, MI
	Monique M. Lapinski (D)	Lecturer, Lansing Community College, Lansing, MI
2009	Benjamin P. Oberts (D)	Fresenius Kabi Pharmaceuticals, Melrose Park, IL
	Monika J. Domińska (D)	Intelligent Bio-Systems, Boston, MA.
2010	Heather A. Pillman (D)	Fujifilm USA, Greensboro, SC
2011	Margaretta M. Dimos (D)	Kalamazoo College, Kalamazoo, MI

2012	Katherine L. Logan (M)	Central Michigan University, Mt. Pleasant, MI
2013	Douglas B. Gornowich (D)	Fresenius Kabi Pharmaceuticals, Melrose Park, IL
	Krzysztof Nawara (D, UW)	Warsaw, Poland
2014	Iwan Setiawan (D)	Jakarta, Indonesia

Research Interests

1. Examination of molecular motion and excitation transport at and near surfaces. The goal of this work is to achieve structural control over energy transport in layered interfaces. We synthesize multilayer assemblies with known structures and layer compositions and examine the motion and excitation transport dynamics of imbedded chromophores. Recent efforts have focused on bisphosphonated oligothiophenes in Zr-phosphonate multilayer assemblies. At issue are the local structural effects that determine the optical response of these assemblies. Ultrafast spectroscopies in conjunction with atomic microscopies (collaboration with G. Y. Liu) have revealed island formation that is mediated by the spatially heterogeneous distribution of surface silanol sites on SiO_x and oxidized Si(100) substrates.

2. Design and synthesis of covalent multilayer assemblies. This chemical synthesis effort is aimed at the construction of multilayer interfaces with single-layer resolution over the chemical identities of the layer constituents. We are focusing on C-C, C-N-C and C-O-C interlayer bonding arrangements in contrast to metal-mediated ionic bonding because of the potential for covalently bonded multilayers to form interfaces with a chemical potential gradient.

3. Spectroscopic characterization of solid state polymeric materials. The polymers of interest here either exhibit large nonlinear optical susceptibilities, or are $(AB)_n$ alternating copolymers where the polymerization process is mediated by optical excitation. Typically, spectroscopic relaxation processes in either of these materials are extremely fast. Understanding these relaxation processes is important to controlling their resulting bulk properties.

4. Elucidation of picosecond solvation dynamics in liquids. Work in this area is centered around the study of molecular motion and intermolecular vibrational energy transport in low viscosity solvents. We have developed a novel way to measure T_1 relaxation times for both ground state and excited state solute vibrations. Our work has shown that vibrational population relaxation is highly mode specific and depends critically on the chemical identity of its immediate environment. Solvent dependent as well as probe molecule state- and chromophore-specific changes in orientational relaxation and vibrational population relaxation behavior are used to elucidate transient interactions that collective comprise the "solvation" of the probe molecule. We have focused on understanding the behavior of alkanes, alcohols and aprotics as solvents.

5. Examination of the onset of crystallization from solution. Despite the fact that purification by crystallization is a ubiquitous technology, there is no significant molecular scale understanding of the events that lead to the nucleation of a crystal. We use trace fluorescent molecules in saturated and super-saturated solutions to measure changes in local environment associated with the onset of crystallization. To ensure that the probe molecule senses a meaningful environment, we use a lock-and-key approach, where a pendant functionality on the probe molecule is identical to the crystallizing moiety.

Research Funding

Grants in Force

1. *Vibrational Energy Dissipation in Fluid Systems and the Influence of Molecular Scale Organization,* ACS Petroleum Research Fund, Grant 52692-ND6, 1/1/13 – 8/31/15, $100,000.
2. *Synthesis of a Controllably-Assembled Highly Permeable Material,* Powdermet, Inc., 8/15/13 – 1/31/14, $39,910.
3. *Structure and Dynamics of Chemically Bound Fluid Interfaces,* Michigan State University, OVPRGS, 11/14/13 – 6/30/15, $48,000.

Prior Support

1. *Construction of a High Speed Fluorescence Lifetime and Anisotropy Imaging System,* PI: John L. McCracken, co-PIs G. J. Blanchard, R. Y. Ofoli, G. M. Swain, D. P. Weliky, National Science Foundation CRIF Program, Grant 1048548, 12/15/10 – 12/14/13, $311,381.

2. *Organization, Dynamics and Translocation at Fluid Interfaces,* National Science Foundation Grant CHE-0808677, 8/1/08 – 7/31/12, $125,000 per year.

3. *International Collaboration in Chemistry: Microphase Photo-Electrochemistry: Light-Driven Liquid-Liquid Ion Transfer Processes and Two-Phase Micro-Photovoltaic Systems,* (Collaboration with Frank Marken, University of Bath UK) National Science Foundation Grant CHE 0822422, 8/1/08 – 7/31/12, $75,000 per year.

4. *IDBR: Development of a Spectroscopic Instrument for the Study of Vibrational Relaxation and Local Motion in Biomolecular Systems*. PI: G. J. Blanchard, co-PIs: R. Y. Ofoli, W. F. Beck, National Science Foundation IDBR Program, Grant 1062419, 7/1/11 – 6/30/12, $275,094.

5. *Understanding Molecular Interactions within Chemically Selective Layered Polymer Assemblies,* U. S. Department of Energy Grant DEFG0299ER15001, 9/1/07 – 8/31/08, $130,000.

6. *Controlling organization and dynamics in fluid interfaces,* National Science Foundation Grant CHE-0445492, 8/1/05 – 7/31/08, $120,000 per year.

7. *SBIR Phase II. Novel Fluoropolymer Material, National Science Foundation,* 1/1/05 – 12/31/06, $499,997 total to Nomadics, Inc. Blanchard's MSU sub-contract $110,000.

8. *Characterizing and Controlling Reactive Group Density and Distribution at Mono- and Multilayer Interfaces,* National Science Foundation Grant CHE-0090864, 3/1/01 – 2/29/05,

$108,000 per year with $40,000 equipment support in the first year and a $26,410 supplement in support of international collaboration.

9. *SuMo SERS: A Novel, High Reliability CBW Agent Detection System Using Surface-Modified Gold Nanoparticles as a SERS Substrate,* Sub-contract through Nomadics, Inc. on AFOSR STTR Grant F033-0304, $35,000, 9/1/03 – 6/1/04.

10. *Studies of Molecular Films at Electrode and Optical Interfaces,* NATO Cooperative Linkage Grant for Support of International Collaborations, $5,400, 7/1/01 – 8/30/04.

11. *NSF-NATO Post-Doctoral Research Fellowship,* National Science Foundation Grant DGE-0209459, Support of Dr. Maciej Mazur, 1/1/03 – 12/31/03, $37,200.

12. *Controlling Mass Transport Phenomena at Layered Interfaces,* U. S. Department of Energy Grant DEFG0299ER15001, 9/1/99 - 8/31/02, $100,000 per year with $20,000 equipment support in the first year.

13. *GAANN Program Grant for Graduate Education in Polymers and Composites*, U. S. Department of Education, joint with K. Jayaraman, G. L. Baker, L. T. Drzal, T. J. Pinnavaia, A. B. Scranton, M. C. Hawley, R. Narayan, M. L. Bruening and M. G. Kanatzidis. $100,880 per year for 3 years.

14. *Designing Oriented, Layered Materials. Applications to Defect Characterization and $\chi^{(2)}$ Nonlinear Optics*, The Petroleum Research Fund, $30,000 per year, 9/1/99 - 8/31/01.

15. *Probing Defect Sites, Molecular Motion and Excitation Transport in Layered Molecular Assemblies*, National Science Foundation Grant CHE 95-08763, 8/1/95 - 3/1/98, $80,000 per year. $29,984 Supplement awarded 12/10/96. Two Year Special Creativity Extension Awarded 1/1/98. $130,000 support in FY 1998 and $100,000 in FY 1999.

16. *Reconnecting the Academic and Industrial Analytical Communities: A Summer Workshop on Identifying Common Ground,* National Science Foundation GOALI Initiative, Grant CHE 96-30118, joint with D. B. Chase (DuPont) and L. D. Rothman (Dow). $60,000, 3 years.

17. *A Suite of Undergraduate Laboratories Focused on Surface and Interface Science,* National Science Foundation ILI Program, Grant DUE 98-50822, joint with S. R. Crouch, M. L. Bruening and S. J. Garrett. $64,054, 2 years.

18. *Center for Photopolymerizations and their Application in Composites Processing. An I/UCRC Planning Grant,* National Science Foundation, joint with A. B. Scranton. $10,000, 6/1/98 - 5/30/99.

19. *Fluorescent Probes of Aqueous Sugar Solution Structure*, National Science Foundation Grant CTS 94-07563, 8/16/94 - 8/15/97, joint with K. A. Berglund, $82,500 per year.

20. *Ultrafast Spectroscopic Studies of the Organization and Dynamical Properties of Organic-Modified Interfaces*, National Science Foundation Grant CHE 92-11237, 7/1/92 - 6/30/95, $68,000 per year. $10,000 Supplement awarded 12/93.

21. *Equipment Proposal for a Rapid Scanning, High Sensitivity FTIR Spectrometer*, National Science Foundation Grant CTS 94-12354, 8/1/94 - 6/30/95, joint with A. B. Scranton, $19,550.

22. *Computer Aided Chemistry Research*, Autodesk, Inc., 1/1/93 - 12/31/93, $3,500.

23. *Request for Laser Beam Diagnostic Equipment*, joint with C. L. Foiles, Spiricon, Inc., 3/1/94, $2,000.

24. *Mechanisms of Energy Storage and Migration in a Polymeric System*, Michigan State University All University Research Initiation Grant, 1/1/93 - 12/31/93, $8,947.

25. *Fundamental Studies on Structure-Property Relationships in Electrically Conductive Polymers and their Oligomers*, Michigan State University Center for Fundamental Materials Research, joint with M. G. Kanatzidis and E. LeGoff. I 6/1/92 - 5/31/94, $80,000 total.

26. *Using Morphology to Tune $\chi^{(3)}$ in Conjugated Polymers*, Michigan State University Center for Fundamental Materials Research, joint with G. L. Baker. 6/1/92 - 5/31/95, $72,250 total.

27. *In-Situ Cure Monitoring for Composites Processing Using Fiber Optic Fluorescence Sensors*, Michigan State University Center for Fundamental Materials Research and Composite Materials and Structures Center, joint with A. B. Scranton. 6/1/93 - 7/31/96, $56,850 total.

28. *Synthesis and Characterization of Tunable 2D Arrays of NLO Chromophores*, Michigan State University Center for Fundamental Materials Research, joint with G. L. Baker. 7/1/96 - 6/30/97. $34,500.

29. *Fundamental Investigations of Charge-Transfer Photoinduced Polymerizations: Mechanisms and Monitoring Degree of Cure*, Michigan State University Center for Fundamental Materials Research, joint with A. B. Scranton. 7/1/96 - 6/30/98. $49,000 total.

30. *Center for Photopolymerizations and their Application in Composites Processing*, Michigan State University Composite Materials and Structures Center, joint with A. B. Scranton. 7/1/97 - 6/30/98. $3,000.

31. *Controlling Second Order Optical Nonlinearities in Directionally Layered Materials*, Michigan State University Center for Fundamental Materials Research. 7/1/97 – 6/30/99. $26,000 total.

32. *Formation and Investigation of Thin Films Based on Self-Assembled Polydiacetylenes*, Michigan State University Center for Fundamental Materials Research. Joint with S. J. Garrett and G. L. Baker. 7/1/97 – 6/30/99. $52,000 total.

33. *Characterization and Computer Modeling for the Optimization of Chemically Amplified Resists,* Michigan State University Composite Materials and Structures Center, joint with Alec B. Scranton. 7/1/97 - 6/30/99. $69,900 total. Supported through the Michigan State University Center for Fundamental Materials Research 7/1/99 - 6/30/00, $13,000.

34. *Exploring New Ultrathin Polymer Films as Sensor Materials*, joint with M. L. Bruening, Michigan State University Center for Fundamental Materials Research, 7/1/99 - 6/30/00, $13,000.

Publications

Publications from Ph.D. thesis work

1. G. J. Blanchard and M. J. Wirth, "A Critical Comparison of Molecular Reorientation in the Ground and Excited Electronic States: Cresyl Violet in Methanol", *J. Chem. Phys.*, **82**, 39-44 (1985).

2. G. J. Blanchard and M. J. Wirth, "Transform Limited Behavior from the Synchronously Pumped CW Dye Laser", *Opt. Commun.*, **53**, 394-400 (1985).

3. M. J. Wirth and G. J. Blanchard, "Picosecond Spectroscopy in Analytical Chemistry", in *Analytical Applications of Lasers*, E. H. Piepmeier (Ed.), J. Wiley, (1986), 477-492.

4. G. J. Blanchard and M. J. Wirth, "Measurement of Small Absorbances by Picosecond Pump-Probe Spectrometry", *Anal. Chem.*, **58**, 532-535 (1986).

5. G. J. Blanchard and M. J. Wirth, "Anomalous Temperature Dependent Reorientation of Cresyl Violet in 1-Dodecanol", *J. Phys. Chem.*, **90**, 2521-2525 (1986).

Publications from work done at Bell Communications Research

6. G. J. Blanchard, "Picosecond Spectroscopic Measurement of a Solvent Dependent Change of Rotational Diffusion Rotor Shape", *J. Chem. Phys.*, **87**, 6802-6808 (1987).

7. G. J. Blanchard and C. A. Cihal, "Orientational Relaxation Dynamics of Oxazine 118 and Resorufin in the Butanols. Valence and State Dependent Solvation Effects", *J. Phys. Chem.*, **92**, 5950-5954 (1988).

8. G. J. Blanchard, "A Study of the State Dependent Reorientation Dynamics of Oxazine 725 in Primary *n*-Aliphatic Alcohols", *J. Phys. Chem.*, **92**, 6303-6307 (1988).

9. G. J. Blanchard, J. P. Heritage, G. L. Baker and S. Etemad, "The Picosecond Spectroscopy of a Polydiacetylene in the Small Signal Limit: Detection and Characterization of a New Long-Lived State", *Chem. Phys. Lett.*, **158**, 329-333 (1989).

10. G. J. Blanchard, "Applications of Picosecond Spectroscopy to Analytical Chemistry", *Trends in Analytical Chemistry*, **8**, 29-34 (1989). Invited.

11. G. J. Blanchard, J. P. Heritage, A. C. Von Lehmen, M. K. Kelly, G. L. Baker and S. Etemad, "Excitonic and Phonon-Mediated Optical Stark Effects in a Conjugated Polymer", *Phys. Rev. Lett.*, **63**, 887-890 (1989).

12. G. J. Blanchard, "An MNDO Calculational Study of Selected Oxazine, Thiazine and Oxazone Dyes", *Chem. Phys.*, **138**, 365-375 (1989).

13. G. J. Blanchard, "The State Dependent Reorientation of Methylene Blue: The Role of Dipolar Solvent-Solute Interactions", *J. Phys. Chem.*, **93**, 4315-4319 (1989).

14. G. J. Blanchard, "Detection of a Transient Solvent-Solute Complex Using Time-Resolved Pump-Probe Spectroscopy", *Anal. Chem.*, **61**, 2394-2398 (1989).

15. J. P. Heritage, S. Etemad and G. J. Blanchard, "Excitonic and Phonon-Mediated Optical Stark Effect in a Conjugated Polymer", *Optics News*, **15**, 13-14 (1989).

16. M. J. Nowak, G. J. Blanchard, G. L. Baker, S. Etemad and Z. G. Soos, "Inter-Chain Dynamics and Side Group Modulation of Excitons in a Polydiacetylene", *Phys. Rev. B*, **41**, 7933-7936 (1990).

17. G. J. Blanchard and J. P. Heritage, "Franck-Condon Enhancement of $\chi^{(3)}$ in a Conjugated Polymer Under Double Resonance Conditions", *J. Chem. Phys.*, **93**, 4377-4382 (1990).

18. G. J. Blanchard, J. P. Heritage, G. L. Baker and S. Etemad, "Picosecond Studies of PTS: Evidence for a New Metastable State", in *Nonlinear Optics and Ultrafast Phenomena*, ed. by R. R. Alfano and L. Rothberg, Nova Publishing, New York, 1990, 109-113.

19. M. J. Nowak, G. J. Blanchard, G. L. Baker, S. Etemad and Z. G. Soos, "Low Temperature Picosecond Spectroscopy of the Polydiacetylene PTS in the Small Signal Limit", *Proc. SPIE*, **1147**, 256 (1990).

20. M. J. Nowak, G. J. Blanchard, G. L. Baker, S. Etemad and Z. G. Soos, "Slow Relaxations in PDA-4BCMU: From Crystals to Films", in *Conjugated Polymeric Materials: Opportunities in Electronics, Opto-Electronics and Molecular Electronics*, ed. by J. L. Bredas and R. R. Chance, NATO ASI Series E, vol. 182, Kluwer Academic Publishers, Dordrecht, 1990, 421-427.

21. G. J. Blanchard and J. P. Heritage, "Picosecond Stimulated Raman Measurement of Enhanced Optical Nonlinearities in a Conjugated Polymer" in *Ultrafast Phenomena VII*, Ed. by C. B. Harris, E. P. Ippen, G. A. Mourou and A. H. Zewail, Springer Verlag Publishers, Berlin, FRG, (1990), 130-132.

22. G. J. Blanchard and J. P. Heritage, "Perturbation of the Nonlinear Optical Response of a Conjugated Polymer by an Adsorbate Induced Electronic State", *Chem. Phys. Lett.*, **177**, 287-292 (1991).

23. G. J. Blanchard, "Counter-ion Dependent Reorientation Dynamics of an Oxazine in Polar Protic and Aprotic Solvents", *J. Phys. Chem.*, **95**, 5293-5299 (1991).

24. G. J. Blanchard, "Time-Resolved Measurement of the Stimulated Emission Stokes Shift in LDS750: Evidence for Inhomogeneous Relaxation Kinetics", *J. Chem. Phys.*, **95**, 6317-6325 (1991).

Publications from work done at Michigan State University

25. S. A. Hambir, T. Yang, G. J. Blanchard and G. L. Baker, "Excitation Migration in the Polydiacetylene DCHD", *Chem. Phys. Lett.*, **201**, 521-527 (1993).

26. S. A. Hambir, Y. Jiang and G. J. Blanchard "Ultrafast Stimulated Emission Spectroscopy of Perylene in Dilute Solution: Measurement of Ground State Vibrational Population Relaxation", *J. Chem. Phys.*, **98**, 6075-6082 (1993).

27. Y. Jiang, S. A. Hambir and G. J. Blanchard, "Synchronous Pumping of Two Dye Lasers Using a Single UV Excitation Source", *Opt. Commun.*, **99**, 216-220 (1993).

28. P. K. McCarthy and G. J. Blanchard, "An AM1 Study of the Electronic Structure of Coumarins", *J. Phys. Chem.*, **97**, 12505-12509 (1993).

29. L. DeWitt, G. J. Blanchard, E. LeGoff, M. E. Benz, J. H. Liao and M. G. Kanatzidis, "Determination of Ground and Excited State Isomerization Barriers for the Oligothiophene: 3',4'-dibutyl-2,2':5',2"-terthiophene", *J. Am. Chem. Soc.*, **115**, 12158-12164 (1993).

30. M. M. Awad, P. K. McCarthy and G. J. Blanchard, "Photoisomerization of Cyanines: A Comparative Study of Oxygen and Sulfur Containing Species", *J. Phys. Chem.*, **98**, 1454-1458 (1994).

31. Y. Jiang, P. K. McCarthy and G. J. Blanchard, "The Role of Multiple Electronic States in the Dissipative Energy Dynamics of Coumarin 153", *Chem. Phys.*, (invited), **183**, 249-267 (1994).

32. Q. Song, Z. Xu, W. Lu, P.W. Bohn, and G.J. Blanchard, "Linear and Nonlinear Spectroscopies Probe Structure and Electronic Properties in Hemicyanine Langmuir-Blodgett Monolayers," *Top. Mtg. Laser Appl. Chem. Anal.*, Technical Digest, Volume 5, Optical Society of America, Washington, DC, 1994, pp. 67-70.

33. Y. Jiang and G. J. Blanchard, "Rotational Diffusion Dynamics of Perylene in *n*-Alkanes. Observation of a Solvent Length-Dependent Change of Boundary Condition", *J. Phys. Chem.*, **98**, 6436-6440 (1994).

34. D. S. Karpovich and G. J. Blanchard, "Direct Measurement of Adsorption Kinetics of Self-Assembled Monolayer Films on a Microcrystalline Gold Surface", *Langmuir*, **10**, 3315-3322 (1994).

35. Y. Jiang and G. J. Blanchard, "Vibrational Population Relaxation of Perylene in *n*-Alkanes. The Role of Solvent Local Structure in Long Range Vibrational Energy Transfer", *J. Phys. Chem.*, **98**, 9411-9416 (1994).

36. Y. Jiang and G. J. Blanchard, "Vibrational Population Relaxation of Perylene in its Ground and Excited Electronic States", *J. Phys. Chem.*, **98**, 9417-9421 (1994).

37. J. P. Rasimas and G. J. Blanchard, "Understanding The Electronic Properties of Glycosylated Chromophores Using AM1 Semiempirical Calculations", *J. Phys. Chem.*, **98**, 12949-12957 (1994).

38. S. A. Hambir, G. J. Blanchard and G. L. Baker, "Disorder Induced Enhancement of the Third Order Optical Nonlinearity in a Conjugated Polymer", *J. Chem. Phys.*, **102**, 2295-2301 (1995).

39. S. A. Hambir, G. J. Blanchard and G. L. Baker, "Low Temperature Transient Optical Spectroscopy of Polydiacetylene DCHD. Evidence for a Distribution of Side Group Orientations", *Appl. Spec.*, **39**, 374-378 (1995).

40. D. S. Karpovich and G. J. Blanchard, "Relating the Polarity Dependent Fluorescence Response of Pyrene to Vibronic Coupling. Achieving a Fundamental Understanding of the *py* Polarity Scale", *J. Phys. Chem.*, **99**, 3951-3958 (1995).

41. J. L. Jessop, A. B. Scranton, and G. J. Blanchard, "*In Situ* Cure Monitoring of a Vinyl Ester Polymer Using Fiber Optic Fluorescence Sensors," *Polym. Mat. Sci. and Eng.*, **72**, 58-59 (1995).

42. D. S. Karpovich and G. J. Blanchard, "An Undergraduate Laboratory Experiment for the Direct Measurement of Monolayer Formation", *J. Chem. Ed.*, **72**, 466-470 (1995).

43. Y. Jiang and G. J. Blanchard, "Vibrational Population and Orientational Relaxation of 1-Methylperylene in *n*-Alkanes. The Effective Range of Dipolar Energy Relaxation in Solution", *J. Phys. Chem.*, **99**, 7904-7912 (1995).

44. J. P. Rasimas, G. J. Blanchard and K. A. Berglund, "A Study of the Fluorescence and Reorientation Dynamics of Carminic Acid in Primary Alcohols", *J. Phys. Chem.*, **99**, 11333-11338 (1995).

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Contributed Talks

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2. G. J. Blanchard and M. J. Wirth, "Absorption Sensitivity of Picosecond Pump-Probe Spectroscopy", The 37th Pittsburgh Conference and Exposition, March, 1986.

3. M. J. Wirth and G. J. Blanchard, “Picosecond Spectroscopic Evidence for Chain Ordering in *n*-Dodecanol”, The 37th Pittsburgh Conference and Exposition, March, 1986.

4. M. J. Wirth and G. J. Blanchard, “Ultrastable Mode-Locked Lasers as Sources in Trace Absorbance Spectroscopy”, FACSS XIII Meeting, October, 1986.

5. G. J. Blanchard and M. J. Wirth, “Extended Range Phase-Locking for Ultra-Sensitive Laser Measurements”, The 38th Pittsburgh Conference and Exposition, March, 1987.

6. G. J. Blanchard, “Picosecond Spectroscopic Observation of Transient Solvation Structure”, FACSS XIV Meeting, October, 1987. Session Chair.

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113. J. D. Secl and G. J. Blanchard, "Amine mediated reduction of Au(III) to gold nanoparticles", ACS Fall 2005 National Meeting, Washington DC, August, 2005.

114. J. D. S. Newman and G. J. Blanchard, "Amine mediated reduction of Au(III) to gold nanoparticles", Anachem 2005 Meeting, Detroit, MI, November, 2005.

115. S. A. Stevenson and G. J. Blanchard, "Spectroscopic investigation of micellar and vesicular interfaces", ACS Spring 2006 National Meeting, Orlando, FL, March, 2006.

116. Angelines Castro Forero, Aaron J. Greiner, Monique Koan, Gary J. Blanchard, R. Mark Worden, and Robert Y. Ofoli, "A Comparative Study of the Fundamental Properties of Liposomes Made by Sonication and by Extrusion.", NSTI Nanotechnology Conference and Trade ShowSanta Clara, California, May, 2007.

117. Mikhail Goldin, Gary Blanchard, Alexander Volkov,Mikhail Filippov, Vladimir Kolesnikov and Mark Goldin, "Activated Carbon Open Circuit Potential Shifts inAqueous Solutions", 212th Electrochemical Society Meeting, Washington, DC, September, 2007.

118. Mark M. Goldin, G.J. Blanchard, A. K. Evseev, V.A. Kolesnikov, Yu. S. Goldfarb, A.G. Volkov and Mikhail M. Goldin, "Redox Potential Measurement in Aqueous Solutions and Biological Media", 212th Electrochemical Society Meeting, Washington, DC, September, 2007.

119. Liping Ding Yu Fang, Monika Dominska and G. J. Blanchard, "Understanding the Role of Cholesterol and Pyrene in Surface-Bound Biomimetic Lipid Bilayer Structures", 57th ISE Annual Meeting, Banff, Alberta, Canada, September 10, 2007.

120. Monika Dominska, Pawel Krysinski and G. J. Blanchard, "Characterizing Biomimetic Interfacial Structures Containing Pyrene," SMCBS 2007 meeting, Wlodowice, Poland, November, 2007.

121. M. M. Goldin, V. A. Kolesnikov, M. S. Khubutiya, A. G. Volkov, G. J. Blanchard, A. K. Evseev and M. M. Goldin, "Electrochemical Properties and Biological Activity of Carbon

Materials Modified with Polypyrrole", 59th Annual Meeting of the International Society of Electrochmistry, Seville, Spain, September, 2008.

122. Monika Dominska, P. Krysinski and G. J. Blanchard, "Organization at Biomimetic Interfaces," Summer School II, Application of multilayers in chemical and biochemical sensors, Polish Academy of Sciences, Olsztyn, Poland, September 19, 2008.

123. Monika Dominska, Pawel Krysinski and G. J. Blanchard, "Probing Interfacial Organization in Artificial Lipid Membranes Using Tethered Pyrene," 60th Pittsburgh Conference and Exposition, Chicago, IL, March 9, 2009.

124. Benjamin P. Oberts and G. J. Blanchard, "Measuring the Spontaneous Translocation of Phospholipids in a Supported Bilayer Structure," 60th Pittsburgh Conference and Exposition, Chicago, IL, March 10, 2009.

125. Janelle D. S. Newman, G. J. Blanchard and William A. MacCrehan, "Interactions of gold nanoparticles and their precursors with aniline monomers," 238th ACS National Meeting, Washington, DC, August 16-20, 2009.

126. Andrew Collins, Xiaohang Zhang, Laurie M. Peter, Jonathon J. Scragg, G. J. Blanchard and Frank Marken, "Triple Phase Boundary Photo-Voltammetry: Resolving Rhodamine B Reactivity in 4-(3-Phenylpropyl)-Pyridine Microdroplets," 4th Workshop on Surface Modification for Chemical and Biochemical Sensing, Krakow, Poland, November 6-11, 2009.

127. Heather A. Pillman and G. J. Blanchard, "Effects of Ethanol on the Phase Behavior of Phospholipid Vesicles", Midwestern Universities Analytical Chemistry Conference, East Lansing, MI, December 4, 2009.

128. Margaretta M. Dimos and G. J. Blanchard, "Evaluating the Role of Pt and Pd Catalyst Morphology on Electro-Catalytic Methanol and Ethanol Oxidation", Midwestern Universities Analytical Chemistry Conference, East Lansing, MI, December 4, 2009.

129. Douglas Gornowich and G. J. Blanchard, "Nanoporous Solids used as Flow-through Catalytic Reactors", Midwestern Universities Analytical Chemistry Conference, East Lansing, MI, December 4, 2009.

130. Iwan Setiawan and G. J. Blanchard, "Reorientation Dynamics of Rhodamine-Tagged Phospholipid in solution and in vesicle. Local heating and Associated Phenomena", Midwestern Universities Analytical Chemistry Conference, East Lansing, MI, December 4, 2009.

131. Christine E. Hay and G. J. Blanchard, "Solvent-Dependent Changes in Molecular Reorientation Dynamics: The Role of Solvent-Solvent Interactions", Midwestern Universities Analytical Chemistry Conference, East Lansing, MI, December 4, 2009.

132. Michelle M. Packard, G. J. Blanchard and and Evangelyn A. Alocilja, "Novel Rapid DNA-Based Bacterial Identification Using Amplification-Free On-Chip Fluorescent Resonance Energy Transfer with In-Situ Hybridization (FRET-ISH)," One-Day International Symposium in Honor of Professor Theodor Förster, Charlottesville, VA, March 10, 2011.

133. Kelly K. Miller and G. J. Blanchard, "Effects of a tethered chromophore on the dynamics of phosphocholine lipid vesicle systems," ACS National Meeting, Anaheim, CA, March 28, 2011.

134. Krzysztof Nawara, Pawel Krysinski and G. J. Blanchard, "Photoreactivity of doxorubicin – catalytic formation of H_2O_2," ICHF2 meeting, Warsaw, Poland, March, 2013.

135. Chen Qiu and G. J. Blanchard, "Phospholipid Vesicle Stability and Temporal Variations in Acyl Chain Organization," Pittcon 2013, Philadelphia, PA, March 17-21, 2013.

136. Krzysztof Nawara, Pawel Krysinski and G. J. Blanchard, "Anthracycline mediated photocatalytic formation of hydrogen peroxide," 7th World Congress on Oxidation Catalysis, Saint Louis, Missouri June 8-12, 2013.

137. Krzysztof Nawara, Pawel Krysinski and G. J. Blanchard, "Interactions of molecules in nanoreactors. How do size and shape of the container affect molecular energy distribution? - a molecular dynamics study," 7th World Congress on Oxidation Catalysis, Saint Louis, Missouri June 8-12, 2013.

138. Dorota Nieciecka, G, J. Blanchard and Pawel Krysinski, "Anthracycline interactions with biomimetic membranes," From MPD to KNOW, First Scientific Conference of PhD Students, Rawa Mazowiecka, Poland, September 27-29, 2013.

139. Dorota Nieciecka, Agata Krolikowska, G. J. Blanchard and Pawel Krysinski, "Interactions of Docorubicin with Organized Interfacial Assemblies," SMCBS 2013 meeting, Lochow, Poland, November 8-12, 2013.

140. Kristopher Kirmess, G. J. Blanchard and Gary R. Kinsel, "Relation of Excited State Lifetimes and Ion Yields for Common MALDI Matrices," 62nd ASMS Conference on Mass Spectrometry and Allied Topics, June 15 - 19, 2014.

Invited Talks

1. *Analytical and Quantitative Applications of Picosecond Spectroscopy*, The University of Delaware, Department of Chemistry, March, 1986.

2. *Transient Structure in the Liquid Phase and its Effect on Molecular Motion*, the University of Tennessee, Department of Chemistry, January, 1988.

3. *Picosecond Pump-Probe Fluorescence Spectroscopy: Applications to Ultrafast Solvation Dynamics* The Eastern Analytical Symposium, October, 1988.

4. *A Systematic Study of Polar Solvation: What Do We Know About Microscopic Solvent-Solute Interactions?* The University of Houston, Department of Chemistry, January, 1989.

5. *Phonon-Mediated Optical Stark Effect in Polydiacetylene*, CLEO/QELS, April, 1989.

6. *Applications of Ultrafast Spectroscopy to Analytical Chemistry*, Northeastern University, Department of Chemistry, February, 1990.

7. *Excitonic and Phonon-Mediated Optical Stark Effects in a Conjugated Polymer*, The American Physical Society March Meeting, March, 1990.

8. *Transient Luminescence Studies of Polar Organic Systems: Dielectric Friction and Solvent Attachment*, The 199th ACS National Meeting, April, 1990.

9. *Chemical Applications of Ultrafast Spectroscopy*, Bates College, Department of Chemistry, September, 1990.

10. *The Role of Photoisomerization on Ultrafast Solvation Dynamics*, FACSS XVII Meeting, October, 1990.

11. *Ultrafast and Not-So-Fast Optical Nonlinearities in Polydiacetylenes*, the 178th Electrochemical Society Meeting, October, 1990.

12. *Ultrafast Analytical Chemistry*, Michigan State University, Department of Chemistry, December, 1990.

13. *Nonlinear Spectroscopy of Conjugated Polymers*, FACSS XVIII/Pacific Conference Meeting, October, 1991.

14. *Optical Spectroscopies as a Probe of $\chi^{(3)}$ in Conjugated Polymer Systems*, The American Chemical Society Polymer Division Workshop on Organic Optoelectronic Materials, April, 1992.

15. *Chemical Applications of Ultrafast Spectroscopy*, Virginia Polytechnic Institute and State University, Department of Chemistry, April, 1992.

16. *Analytical Ultrafast Spectroscopy*, State University of New York at Buffalo, Department of Chemistry, December, 1992.

17. *Using Stimulated Spectroscopies to Probe Vibrational Relaxation*, The University of Illinois, Department of Chemistry, February, 1993.

18. *Does Vibrational Relaxation Really Matter?*, The Ohio State University, Department of Chemistry, February, 1993.

19. *Characterizing Conjugated Polymers for Photonic Signal Processing Applications*, The ACS Great Lakes and Central Joint Regional Meeting, June, 1994.

20. *Using Nonlinear Spectroscopy to Understand the Morphology of Conjugated Polymers*, The FACSS XXI Meeting, October, 1994.

21. *Understanding How Vibrational Energy Relaxes in Liquids*, Michigan Technological University, Department of Chemistry, October, 1994.

22. *Making Optical Logic Gates with Polymers*, Northern Michigan University, Department of Chemistry, October, 1994.

23. *Measuring Local Structure in Liquids Through Vibrational Relaxation*, Transylvania University, November, 1994.

24. *Probing Local Organization with Molecular Vibrations. Understanding How Molecules Exchange Energy in Solution*, The FACSS XX Meeting, October, 1995.

25. *Understanding How Molecules Exchange Vibrational Energy in Solution*, ANACHEM 1995 Meeting, October, 1995.

26. *Understanding $\chi^{(3)}$ Nonlinear Responses in Conjugated Polymers*, Wayne State University, Department of Chemistry, December, 1995.

27. *Vibrational Energy Transport and its Relationship to Local Organization in Solution*, University of Missouri, Department of Chemistry, March, 1996.

28. *Vibrational Energy Transport and its Relationship to Local Organization in Solution*, University of Kansas, Department of Chemistry, March, 1996.

29. *Using Vibrational Energy Relaxation to Examine Organization in Liquids*, Carnegie Mellon University, Department of Chemistry, April, 1996.

30. *Understanding How Single Layers of Molecules form on Metal Surfaces*, Oakland University, Department of Chemistry, September, 1996.

31. *Understanding How Single Layers of Molecules form on Metal Surfaces*, Grand Valley State University, Department of Chemistry, September, 1996.

32. *Using Vibrational Population Relaxation to Study Short Range Organization in Solution*, University of Notre Dame, Department of Chemistry and Radiation Laboratory, October, 1996.

33. *Dynamics Within a Single Layer of Molecules: Relaxation, Aggregation and the Absence of (Fast) Motion*, University of Michigan, Department of Chemistry, November, 1996.

34. *Understanding Dynamics within Layered Assemblies*, Iowa State University, Department of Chemistry, April, 1997.

35. *Understanding How Molecular Layers Form on Gold Surfaces,* Calvin College, November, 1997.

36. *The Fundamentals of Alkanethiol Monolayer Formation on Gold,* Hope College, November, 1997.

37. *Understanding The Structure and Dynamics of Self-Assembling Multilayer Systems,* Bates College, Department of Chemistry, February, 1998.

38. *Understanding How Single Thiol Layers Form on Gold Surfaces,* Bowdoin College, Department of Chemistry, February, 1998.

39. *Dynamics and Relaxation in Layered Molecular Assemblies – Relating Spectroscopy and Structure,* Texas A&M University, Department of Chemistry, April, 1998.

40. *Surface Morphology of Multilayer Assemblies – a Combined Spectroscopic and Microscopic Approach,* University of Houston, Department of Chemistry, April, 1998.

41. *Gaining Structural Insight into Layered Molecular Assemblies Through Transient Fluorescence Spectroscopies,* 31st ACS Great Lakes Regional Meeting, Milwaukee, WI, June, 1998.

42. *Photopolymerization of Maleimides and Vinyl Ethers - Mechanistic Insights and Applications to Molecular Interfaces,* IUCRC Planning Meeting, Estes Park, CO, November, 1998.

43. *Understanding Relaxation Processes in Layered Molecular Assemblies,* Georgia Southern University, Department of Chemistry, December, 1998.

44. *How Molecular Details Can Complicate Established Theories - a Story of Energy Transport in Layered Materials,* Armstrong Atlantic University, Department of Chemistry, December, 1998.

45. *Understanding Morphology and Relaxation Dynamics at Layered Interfaces,* Southern Illinois University, Department of Chemistry, April, 1999.

46. *Understanding Morphology and Relaxation Dynamics at Layered Polymer Interfaces,* The ACS National Meeting, New Orleans, LA, August, 1999.

47. *Designing and Characterizing Layered Materials,* Utah State University, Department of Chemistry, September, 1999.

48. *Using Optical Spectroscopies to Characterize Structural Features in Layered Materials,* The University of Utah, Department of Chemistry, September, 1999.

49. *Designing Layered Materials that Use Covalent Interlayer Linkages: Applying Polymer Chemistry to Interfaces,* Clemson University, Department of Chemistry, November, 1999.

50. *Understanding Morphology and Relaxation Dynamics at Layered Interfaces,* Georgia Institute of Technology, Department of Chemistry, November, 1999.

51. *Designing and Characterizing Layered Materials,* St. Louis University, Department of Chemistry, December, 1999.

52. *Using Optical Spectroscopy to Understand Mesoscopic Structural Features in Layered Materials,* The University of Colorado, Department of Chemistry, January, 2000.

53. *Using Optical Spectroscopy to Understand Mesoscopic Structural Features in Layered Materials,* Colorado State University, Department of Chemistry, February, 2000.

54. *Linear and Nonlinear Optical Characterization of Interfacial Materials*, The American Chemical Society National Meeting, March 28, 2000.

55. *Characterizing and Controlling Nanoscale Structure Using Layered Materials,* BioMEMs & Biomedical Nanotechnology WORLD 2000 Conference, Columbus, OH, September 25, 2000.

56. *Optical Spectroscopy and Chemical Synthesis as Tools for Interface Characterization,* College of Wooster, Department of Chemistry, November 9, 2000.

57. *Optical Spectroscopy and Chemical Synthesis as Tools for Interface Characterization,* State University of New York, Brockport, Department of Chemistry, January 30, 2001.

58. *Understanding Surface Structure Using Transient Fluorescence Spectroscopy,* Saginaw Valley State University, Department of Chemistry, March 15, 2001.

59. *Design and Characterization of Layered Polymeric Interfaces,* ACS Midwest Regional Meeting, Grand Rapids, MI, June 13, 2001.

60. *Nonlinear Spectroscopic Characterization of Mono- and Multilayer Interfaces,* ACS Southeast Regional Meeting, Savannah, GA, September 24, 2001.

61. *Putting Polymers on Surfaces one Layer at a Time,* University of Akron, Department of Chemistry, November 6, 2001.

62. *Controlling Adsorption and Desorption at Surfaces Using Molecular Monolayers,* St. Lawrence University, Department of Chemistry, November 5, 2002.

63. *Controlling Adsorption and Desorption at Surfaces Using Molecular Monolayers,* SUNY Pottsdam, Department of Chemistry, November 5, 2002.

64. *Controlling Interfacial Adsorption and Desorption with Layered Polymer Structures,* Louisiana State University, Department of Chemistry, January 31, 2003.

65. *Achieving Thermodynamic Control over Interfacial Adsorption,* Michigan State University Center for Fundamental Materials Research Symposium, March 31, 2003.

66. *Spectroscopic Characterization of Mono- and Multilayer Interfacial Structures,* Wayne State University, Department of Chemistry, October 8, 2003.

67. *Design, Synthesis and Characterization of Monomolecular Interfacial Layers,* SURPHARE Workshop on Interfaces, operated by the Polish Academy of Sciences, November 13-16, 2003, Bialowieza, Poland.

68. Pawel Krysinski and G. J. Blanchard, *Spectroscopic and Electrochemical Characterization of Interfacial Biomimetic Assemblies for Biosensors* SURPHARE Workshop on Interfaces, operated by the Polish Academy of Sciences, November 13-16, 2003, Bialowieza, Poland.

69. Pawel Krysinski, A. Zebrowska and G. J. Blanchard, *Designing Biomimetic Molecular Films via Self-Assembly,* 78th ACS Colloid and Surface Science Symposium, Yale University, New Haven, CT, June 20-23, 2004.

70. *Gaining Molecular Control Over Interfacial Phenomena*, International Conference on Electrode Processes, Szczyrk, Poland, September 15-18, 2004.

71. *Spectroscopic Characterization of Mono- and Multilayer Interfacial Structures,* Oakland University, Department of Chemistry, January 19, 2005.

72. Maciej Mazur and G. J. Blanchard, *Probing Intermolecular Communication in Monolayers Using Polycyclic Aromatic Hydrocarbons,* The 207th Electrochemical Society Meeting, Quebec, PQ, Canada, May 15, 2005.

73. Pawel Krysinski, Maciej Mazur and G. J. Blanchard, *Application of ZP Chemistry for the Immobilization of Polycyclic Aromatic Hydrocarbons on Boron-Doped Diamond, Indium Tin Oxide and Quartz,* The 207th Electrochemical Society Meeting, Quebec, PQ, Canada, May 15, 2005.

74. Maciej Mazur, Pawel Krysinski and G. J. Blanchard, *Comparing the Reactivity of Silica surfaces with Boron-Doped Diamond and Indium Tin Oxide*, 38th Silicon Symposium, Boulder, Colorado, June 2, 2005.

75. Pawel Krysinski, Monika Dominska, Maciej Mazur and G. J. Blanchard, *Probing Interfacial Organization in Surface Monolayers using Tethered Pyrene*, XVII International Meeting on Electrode Processes, Coimbra, Portugal, June 19-24, 2005.

76. G. J. Blanchard, Kelly Greenough and Monique Koan, *Probing local organization in biomimetic bilayer systems,* 32nd FACSS and 51st ICASS Meeting, Quebec, PQ, Canada, October 9-13, 2005.

77. G. J. Blanchard and Monika Dominska, *Dynamics and Reactivity of Surface-Bound Spectroscopic Probes,* 32nd FACSS and 51st ICASS Meeting, Quebec, PQ, Canada, October 9-13, 2005.

78. Maciej Mazur, Monika Dominska, Pawel Krysinski and G. J. Blanchard, *Probing Organization and Communication at Layered Interfaces,* 2nd Workshop on Surface Modification for Chemical and Biochemical Sensing, Kazimierz, Poland, November 6-10, 2005.

79. *Probing Lipid Bilayer Fluidity and Structure,* Saginaw Valley State University, Department of Chemistry, January 26, 2006.

80. *Using Optical Spectroscopy and Electrochemistry to Probe Organization Lipid Bilayer and Biomimetic Structures,* Southern Illinois University at Carbondale, Department of Chemistry, April 14, 2006.

81. *Characterizing Lipid Bilayer and Biomimetic Structures Spectroscopically and Electrochemically,* Wichita State University, Department of Chemistry, April 26, 2006.

82. *Dynamics within Bilayer Membranes,* Gordon Research Conference on Bioelectrochemistry, Aussois, France, September 6, 2006.

83. *Understanding and Controlling Curvature and Intermolecular Interactions in Biomimetic Membranes,* 3rd Workshop on Surface Modification for Chemical and Biochemical Sensing, Wlodowice, Poland, November 4-8, 2007.

84. *Immobilization of molecules: From self-assembled monolayers to polymeric hollow structures*, Maciej Mazur, Paweł G. Krysiński, Gary J. Blanchard and Jerzy Rogalski, 3rd Workshop on Surface Modification for Chemical and Biochemical Sensing, Wlodowice, Poland, November 4-8, 2007.

85. *Dynamics, Phase Transitions and the Role of Curvature in Lipid Bilayers*, Institute of Chemistry, Chinese Academy of Sciences, Beijing, China, May 12, 2008.

86. *Factors Affecting Organization in Biomimetic Interfaces,* Department of Chemistry, Shaanxi Normal University, Xi'an, China, May 14, 2008.

87. *Factors Affecting Organization in Biomimetic Interfaces,* Department of Chemistry, Xi'an Jiaotong University, Xi'an, China, May 16, 2008.

88. *Dynamics, Phase Transitions and the Role of Curvature in Lipid Bilayers,* Key Laboratory of Applied Surface and Colloid Chemistry, Shaanxi Normal University, Xi'an, China, May 17, 2008.

89. *Design, Synthesis and Characterization of Interfacial Layers*, Summer School II, Application of multilayers in chemical and biochemical sensors, Polish Academy of Sciences, Olsztyn, Poland, September 15, 2008.

90. *Multilayers Grown at Interfaces – Chemistry and Selectivity,* Summer School II, Application of multilayers in chemical and biochemical sensors, Polish Academy of Sciences, Olsztyn, Poland, September 16, 2008.

91. *Spectroscopic Characterization of Mono- and Multilayer Interfacial Structures,* Summer School II, Application of multilayers in chemical and biochemical sensors, Polish Academy of Sciences, Olsztyn, Poland, September 17, 2008.

92. *Dynamics, Phase Transitions and the Role of Curvature in Lipid Bilayers,* Summer School II, Application of multilayers in chemical and biochemical sensors, Polish Academy of Sciences, Olsztyn, Poland, September 18, 2008.

93. *Factors Affecting Organization in Biomimetic Interfaces,* Summer School II, Application of multilayers in chemical and biochemical sensors, Polish Academy of Sciences, Olsztyn, Poland, September 19, 2008.

94. *Self-Assembling Monolayers – an Overview*, University of Warsaw, Department of Chemistry, International Graduate Student Program, Warsaw, Poland, May 11, 2009.

95. *Multilayer Structures, Covalent and Ionic*, University of Warsaw, Department of Chemistry, International Graduate Student Program, Warsaw, Poland, May 12, 2009.

96. *Lipid Mono- and Bilayers,* University of Warsaw, Department of Chemistry, International Graduate Student Program, Warsaw, Poland, May 13, 2009.

97. *Spectroscopic Characterization of Interfaces,* University of Warsaw, Department of Chemistry, International Graduate Student Program, Warsaw, Poland, May 14, 2009.

98. *Time Resolved Spectroscopy and its Utility for Interfaces,* University of Warsaw, Department of Chemistry, International Graduate Student Program, Warsaw, Poland, May 15, 2009.

99. *Lipid Bilayers: Impurities, Curvature and Self-Assembly,* University of Bath, Department of Chemistry, August 19, 2009.

100. *Self-Assembled Monolayers: A Review of Selected Systems*, Summer School III, Application of multilayers in chemical and biochemical sensors, Polish Academy of Sciences, Olsztyn, Poland, September 7, 2009.

101. *Optical and Spectroscopic Characterization of Interfaces,* Summer School III, Application of multilayers in chemical and biochemical sensors, Polish Academy of Sciences, Olsztyn, Poland, September 9, 2009.

102. *Lipid Bilayers: Impurities, Curvature and Self-Assembly,* Summer School III, Application of multilayers in chemical and biochemical sensors, Polish Academy of Sciences, Olsztyn, Poland, September 11, 2009.

103. *Strategies for Self-Assembly of Phospholipids at Interfaces*, 4th Workshop on Surface Modification for Chemical and Biochemical Sensing, Krakow, Poland, November 6-11, 2009.

104. *Summary of Advances in Biosensing and Interfacial Phenomena – SMCBS 2009*, 4th Workshop on Surface Modification for Chemical and Biochemical Sensing, Krakow, Poland, November 6-11, 2009.

105. *Lipid Bilayer Structures: Impurities, Curvature and Self-Assembly*, Michigan State University Center for Nanomaterials Design and Assembly, November 19, 2009.

106. *Advances in Nanoporous Solids for use as Electrocatalysts*, University of Warsaw, Department of Chemistry, September 10, 2010.

107. *Using Spectroscopy to Reveal Dynamics in Self-Assembling Systems*, FACSS 2010 meeting, Anachem Award Symposium, Raleigh-Durham, NC, October 19, 2010.

108. *Biomimetic Interfaces – Binding a Fluid to a Surface*, Saginaw Valley State University, Department of Chemistry, Saginaw, MI, February 10, 2011.

109. *Assessment of cytochrome c oxidase activity in reconstituted proteoliposomes*, ACS National Meeting, Anaheim, CA, March 28, 2011.

110. *Biomimetic Interfaces – Binding a Fluid to a Surface,* Shaanxi Normal University, Department of Chemistry, Xi'an, PRC, May 12, 2011.

111. *Local Heating in Bilayers. Its Importance and Quantitation,* Shaanxi Normal University, Department of Chemistry, Xi'an, PRC, May 14, 2011.

112. *American Cultire and Its Influence on Education,* Chunjuan Rostrum Lecture, Shaanxi Normal University, Graduate School, Xi'an, PRC, May 15, 2011.

113. *Optically Induced Perturbations in Bilayer Structures. Consequences on Local Organization,* MPD International PhD Program, University of Warsaw, Łochow, Poland, October 6, 2011.

114. *Organization and Dynamics within Supported Interfaces: Implications for the Creation of Biomimetic Structures*, SMCBS 2011, 5th Workshop on Surface Modification for Chemical and Biochemical Sensing, Łochow, Poland, November 4-9, 2011.

115. *Characterizing Interfaces Using Time-Resolved Spectroscopy*, Eastern Analytical Symposium, Somerset, NJ, November 16, 2011. NYSAS Gold Medal Award Address.

116. *Nanoporous Solids as Catalysts and Catalyst Supports,* Saginaw Valley State University, Department of Chemistry, Saginaw, MI, March 15, 2012.

117. *Anthracycline Photoreactivity and Iron Complexation*, Krzysztof Nawara, Pawel Krysinski and G. J. Blanchard, International PhD Program, University of Warsaw, Pultusk, Poland, October 4, 2012.

118. *Nanomaterials and their Potential for the Community: From Portable Power to Chemical Sensing*, 68th Annual Fall Scientific Meeting of the Midland Section of the ACS, Saginaw, MI, October 20, 2012 (Keynote Address).

119. *Electrocatalytic Oxidation of Ethanol at Metallic Nanoporous Catalyst Structures*, 223rd Meeting of the Electrochemical Society, Toronto, Canada, May 15, 2013 (Keynote lecture).

120. *Doctoral Chemistry Programs in the US: Benefits and Limitations of the Current Structure*, From MPD to KNOW, First Scientific Conference for PhD Students, Rawa Mazowiecka, Poland, September 28, 2013 (Plenary Lecture).

121. *Imaging Supported Lipid Bilayers – Factors that Influence Film Fluidity and Domain Structures and Molecular-Scale Order*, SMCBS 2013, 6th Workshop on Surface Modification for Chemical and Biochemical Sensing, Łochow, Poland, November 8-12, 2013.

122. *Imaging Supported Interfacial Layers – Factors that Influence Interface Organization and Dynamics*, 225th Meeting of the Electrochemical Society, Orlando, Florida, May 13, 2014.

123. *Electrocatalytic Enhancement Effects at Platinized Nanoporous Substrates: Oxidation of Ethanol at PtRu Nanoparticles Dispersed over Rh-Containing ZrO_2 Support*, Pawel J. Kulesza, Iwona A. Rutkowska, Ewelina Zagubien and Gary J. Blanchard, 225th Meeting of the Electrochemical Society, Orlando, Florida, May 13, 2014.