

Mark N. KobraK

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Education:

- **University of Chicago** Ph.D., Physical Chemistry (1997)
Thesis: "Aspects of Selective Photochemistry"
Advisor: Stuart A. Rice
- **Northwestern University** B.A., Chemistry and Integrated Science, with Honors (1992)

Research Experience:

- Jan 2006-present: **Brooklyn College of the City University of New York** Associate Professor of Chemistry
- Sept 2001-Jan 2006: **Brooklyn College of the City University of New York** Assistant Professor of Chemistry
- Jan 2000-Aug 2001: **The University of Notre Dame** and **The Pennsylvania State University** Post-doctoral fellow with Sharon Hammes-Schiffer, Department of Chemistry
- 1998-Jan 2000: **The University of Houston** Post-doctoral fellow with Eric R. Bittner, Department of Chemistry
- 1992-1998: **The University of Chicago** Graduate student with Stuart A. Rice, Department of Chemistry
- 1990-1992 **Northwestern University** Undergraduate researcher with Mark A. Ratner, Department of Chemistry
- 1989 **Northwestern University** Undergraduate researcher with Emile Okal, Department of Geology

Publications:

- *The Chemical Environment of Ionic Liquids: Links Between Liquid Structure, Dynamics and Solvation*, M.N. KobraK, Adv. Chem. Phys. **139** 85 (2008).
- *The Relationship Between Solvent Polarity and Molar Volume in Room-Temperature Ionic Liquids* M.N. KobraK, Green Chem. **9** 80 (2008).
- *A Comparative Study of Solvation Dynamics in Room Temperature Ionic Liquids*, M.N. KobraK, J. Chem. Phys. **127** 184507 (2007).
- *Electrostatic Interactions of a Neutral Dipolar Solute with a Fused Salt: A New Model for Solvation in Ionic Liquids* M.N. KobraK, J. Phys. Chem. B **111** 4755 (2007).
- *Lewis Structure Representation of Free Radicals Similar to ClO*, W. Hirsch and M. KobraK, J. Chem. Ed. **84** 1360 (2007).
- *SmartTutor: A Unified Approach for Enhancing Science Education*, K. Harrow, R. Eckhardt, D. Kopec, M. KobraK and P. Whitlock, J. Comp. Sci. in Coll. **22** 29 (2007).
- *Characterization of the Solvation Dynamics of a Room-Temperature Ionic Liquid via Molecular Dynamics Simulation*, M.N. KobraK, J. Chem. Phys., **125** 064502 (2006).

- *Understanding Organic Processes in Ionic Liquids: Achievements So Far and Challenges Remaining*, J. B. Harper and M.N. KobraK, Mini-Rev. in Org. Chem. **3** 253 (2006).
- *An Electrostatic Interpretation of Structure-Property Relationships in Ionic Liquids*, M.N. KobraK and N. Sandalow, in "Molten Salts XIV", R. Mantz, ed., The Electrochemical Society, Pennington, NJ, 2006.
- *Solvation Dynamics of Room-Temperature Ionic Liquids: Evidence for Collective Solvent Motion on Sub-Picosecond Timescales*, M.N. KobraK and V. Znamenskiy, Chem. Phys. Lett. **395** 127 (2004).
- *A Molecular Dynamics Study of Polarity in Room-Temperature Ionic Liquids*, V. Znamenskiy and M.N. KobraK, J. Phys. Chem. B **108** 1072 (2004).
- *Error Estimation in Histogram-Based Free Energy Calculations*, M.N. KobraK, J. Comp. Chem. **24** 1437 (2003).
- *Doppler Shift and Energy Transfer to a Solar Sail*, W. Hirsch and M.N. KobraK, Physics Ed. **37** 422 (2002).
- *Molecular Dynamics Simulation of Proton-Coupled Electron Transfer in Solution*, M.N. KobraK and S. Hammes-Schiffer, J. Phys. Chem. A **105** 10435 (2001).
- *Reaction Path Hamiltonian Analysis of Dynamical Solvent Effects for a Claisen Rearrangement and a Diels-Alder Reaction*, H. Hu, M.N. KobraK, C. Xu, and S. Hammes-Schiffer, J. Phys. Chem. A **104** 8058 (2000).
- *Quantum Simulations of Polaron Recombination Dynamics in Linear Polyenes*, E. R. Bittner and M. N. KobraK, Synth. Metals **121** 1635 (2001).
- *A Quantum Molecular Dynamics Study of Polaron Recombination in Conjugated Polymers*, M. N. KobraK and E. R. Bittner, Phys. Rev. B **62** 11473 (2000).
- *A Quantum Molecular Dynamics Study of Exciton Self-Trapping in Conjugated Polymers: Temperature Dependence and Spectroscopy*, M. N. KobraK and E. R. Bittner, J. Chem. Phys. **112** 7684 (2000).
- *A Dynamic Model for Exciton Self-Trapping in Conjugated Polymers I: Theory*, M. N. KobraK and E. R. Bittner J. Chem. Phys. **112** 5399 (2000).
- *A Dynamic Model for Exciton Self-Trapping in Conjugated Polymers II: Implementation*, M. N. KobraK and E. R. Bittner J. Chem. Phys. **112** 5410 (2000).
- *The Equivalence of Photosensitive Adiabatic Passage and the Strong Field Brumer-Shapiro Approach*, M.N. KobraK and S.A. Rice, J. Chem. Phys. **109** 1 (1998).
- *Selective Photochemistry via Adiabatic Passage: An Extension of StiRAP for Degenerate Final States*, M.N. KobraK and S.A. Rice, Phys. Rev. A **57** 2885 (1998).
- *Coherent Population Transfer via a Resonant Intermediate State: The Breakdown of Adiabatic Passage*, M.N. KobraK and S.A. Rice, Phys. Rev. A **57** 1158 (1998).
- *The Influence of High-Frequency Modes on Two Pulse Spectroscopy*, M.N. KobraK and S.A. Rice, J. Chem. Phys. **107** 4091 (1997).
- *The Influence of High-Frequency Modes on Ultrashort Pulse Absorption Initiated Processes*, M.N. KobraK, E.M. Hiller, and S.A. Rice, J. Chem. Phys. **105** 9403 (1996).

Awards:

- Petroleum Research Fund Type-G Grant (2005-2007)
- Department of Energy Faculty and Student Team Fellowship (2003, 2004)
- PSC-CUNY Research Grant (2002)
- PSC-CUNY Incentive Grant (2001)