CV

Sung Ik Yang

Chemistry Bldg
Brookhaven National Laboratory
Upton, NY 11973
Tel : 1-631-344-4357, 4347
FAX : 1-631-344-5815
e-mail : siyang@bnl.gov

Academic Training

Postgraduate : Research Associate, Brookhaven National Lab, March, 2002-present
Postdoctoral Research Fellow, Harvard University, Feb, 2000 – March, 2002
Postdoctoral Research Fellow, Washington University, Sept. 1998 – Jan. 2000

Ph D. Chemistry, Seoul National University, March, 1994 - Aug, 1998
Thesis Title :"Photophysical properties of fullerene"

Research Student, Washington University, August, 1997 – February, 2000

Research Student, Korea Research Institute of Standard and Science, January, 1995–August, 1998

MS Chemistry, Seoul National University, March, 1992 - February, 1994

BS Chemistry Education, Seoul National University, March, 1988 - February, 1992

Research Interests

Ultrafast spectroscopy of Materials
Molecular Photonic Device
Nanotechnology
Biotechnology

Research Experiences

· Fullerene synthesis and its applications
· Exciton dynamics in molecular solids
· Electronic spectrum and energy and electron transfer phenomena of porphyrin compounds

· Transient absorption measurement by using high power femtosecond Ti:S laser system equipped with an OPA/OPG system
· CW laser photoluminescence using Ar ion and He-Cd lasers
· Time-correlated single photon counting measurement using a cavity dumped picosecond dye laser

· Flash Photolysis and time-resolved photoluminescence measurement by using Q-switched nanosecond and mode-locked picosecond laser systems
· Molecular photonics-designs and their application
· AFM study of Protein Structure
· Carbon nanotube AFM tip synthesis and its application
· Single molecule fluorescence
· Carbon nanotube synthesis and its application
· Self-assembled nanostructure
· Nanowire synthesis and its application (biosensor, chemical sensor)

Fellowships and Awards

Chunwon scholarship 1989-1991, Seoul National University
Teaching fellowship 1992-1995, Seoul National University
Research fellowhip 1992-1998, Seoul National University
Young Scientist investigator Award, 1994-1995, Korea

Professional Affiliations:

American Chemical Society
Materials Research Society

Publications

1. E.-j. Shin, M. Lee, D. Kim, Y. D. Suh, S. I. Yang, S. M. Jin, S. K. Kim, "Temperature-dependent photoluminescence study of C60 and C70", *Chem. Phys. Lett*. **209**, 427 (1993).

2. E.-j. Shin, O.-K. Song, D. Kim, Y. D. Suh**,** S. I. Yang, S. K. Kim, "Temperature-dependent Raman study on C70 film. Observation of a rotational ordering transition", *Chem. Phys. Lett*. **218**, 107 (1994).

3. S. I. Yang, Y. D. Suh, S. M. Jin and S. K. Kim, E. -j. Shin, D. Kim, "Energy Relaxation Dynamics of Photoexcited C60 Solid", *J. Phys. Chem*. **100**, 9223 (1996).

4. R. W. Wagner, J. Seth, S. I. Yang, D. Kim, D. F. Bocian, D. Holten, J. S. Lindsey, "Synthesis and Excited-State Photodynamics of a Molecular Square Containing Four Mutually Coplanar Porphyrins", *J. Org. Chem*. **63,** 5042 (1998).

5. F. Li, S. I. Yang, Y. Ciringh, J. Seth, C. H. Martin, III, D. L. Singh,

Dongho Kim, R. R. Birge, D. F. Bocian, D. Holten, J. S. Lindsey, "Design, Synthesis, and Photodynamics of Light-Harvesting Arrays Comprised of a Porphyrin and One, Two, or Eight Boron-Dipyrrin Accessory Pigments", *J. Am. Chem. Soc*. **120**, 10001 (1998).

6. S. I. Yang, R. K. Lammi, J. Seth, J. A. Riggs, T. Arai, D. Kim, D. F. Bocian, D. Holten, J. S. Lindsey, " Excited-State Energy Transfer and Ground-State Hole/Electron Hopping in p-Phenylene-Linked Porphyrin Dimers*", J. Phys. Chem. (B)* **102**, 9426 (1998)

7. S. I. Yang, J. Seth, J.-P. Strachan, S. Gentemann, D. Kim, D. Holten, J. S. Lindsey, D. F. Bocian, " Ground-and Excited-State Electronic Properties of Halogenated Tetraarylporphyrins. Tuning the Building Blocks for Porphyrin Based Photonic Devices*", J. Porphyrins Phthalocyanines*, **3**, 117 (1999).

8. S. I. Yang, J. Seth, T. Balasubramanian, D. Kim, J. S. Lindsey, D. Holten, D. F. Bocian, "Interplay of Orbital Tuning and Linker Location in Controlling Electronic Communication in Porphyrin-Based Nanostructures", *J. Am. Chem. Soc*. **121**, 4008 (1999).

9. H. S. Cho, S. I. Yang, S. K. Kim, E. -j. Shin, D. Kim "Comparative Study of Exciton Relaxation Dynamics in C60 and C70", *J. Phys. Chem. (B)* **103**, 6504 (1999).

10. J. Li, A. Arounaguiri, S. I. Yang, J. R. Diers, J. Seth, D. F. Bocian, D. Holten, J. S. Lindsey "Template-Directed Synthesis, Excited-State Photodynamics, and Electronic Communication in a Hexamer Wheel of Porphyrin", *J. Am. Chem. Soc*. **121,** 8927 (1999).

11. P. Hascoat, S. I. Yang, R. K. Lammi, J. Alley, D. F. Bocian, J. S. Lindsey, D. Holten, "Effects of Metalation State(Free Base, Mg, Zn, Cd) on Excited-State Energy Transfer in Diarylethyne-Linked Prophyrin Dimers", *Inorg. Chem*. **38**, 4849 (1999).

12. J. Li, J. R. Diers, J. Seth, S. I. Yang, D. F. Bocian, D. Holten, J. S. Lindsey "Synthesis and Propeties of Star-Shaped Multiporphyrin-Phthalocyanine Light Harvesting Arrays", *J. Org. Chem*. **64**, 9090 (1999).

13. S. I. Yang, J. Li, H. S. Cho, D. Kim, D. Holten, J. S. Lindsey "Synthesis and Excited-State Photodynamics of Phenylethyn-Linked Porphyrin-Phthalocyanine Dimers", *J. Mat. Chem*. **10**, 283 (2000).

14. S. Prathapan, S. I. Yang, J. Seth, M. A. Miller, D. F. Bocian, D. Holten, J. S. Lindsey "Synthesis and Excited-State Photodynamics of Perylene-Porphyrin Dyads. 1. Parallel Energy and Charge Transfer via a Diphenylethyne Linker" *J. Phys. Chem.(B)***105***, 8237 (2001).*

15. S. I. Yang, S. Prathapan, M. A. Miller, J. Seth, D. F. Bocian, J. S. Lindsey, D. Holten

"Synthesis and Excited-State Photodynamics in Perylene-Porphyrin Dyads 2. Effects of Porphyrin Metalation State on the Energy-Transfer, Charge-Transfer, and Deactivation Channels" *J. Phys. Chem.(B)* **105***, 8249 (2001)*.

16. S. I. Yang, R. K. Lammi, S. Prathapan, M. A. Miller, J. Seth, J. R. Diers, D. F. Bocian, J. S. Lindsey, D. Holten "Synthesis and excited-state photodynamics of perylene porphyrin dyads Part 3. Effects of perylene, linker, and connectivity on ultrafast energy transfer", *J. Mat. Chem*.**11**, 2420 (2001)

17. M. del Rosario Benites, T.E. Johnson, S. Weghorn S. Yu, P. D. Rao, J. R. Diers, S. I. Yang,, D. F. Bocian, D. Holten, J. S. Lindsey,
"Synthesis and Properties of Weakly Coupled Dendrimeric Multiporphyrin
Light-Harvesting Arrays and Hole-Storage Reservoirs," M. del Rosario Benites, T.E. Johnson, Weghorn, *J. Mater. Chem*.**12**, *65* (2002)

18. Evan T. Powers, Sung Ik Yang, Charles M. Lieber, Jeffery W. Kelly,
"Ordered Langmuir-Blodgett Films of Amphiphilic β-Hairpin Peptides Imaged by Atomic Force Microscopy", *Angewandte. Chem, Int. Ed*. **41**, *127* (2002)

19. C. Kirmaier, S. I, Yang, S. Prathapan, M.A. Miller, J. R. Diers, D. F. Bocian, J. S. Lindsey and D. Holten,
"Synthesis and Excited-State Photodynamics of Perylene-Porphyrin Dyads 4. Ultrafast Charge-Separation and Charge Recombination Between Tightly -Coupled Units in Polar Media", *Res. Chem. Intermed*. **28**, 719-740 (2002)

20. H. S. Cho, T. K. Ahn, S. I. Yang, S. M. Jin, S. K. Kim, E.-j. Shin, D. Kim, H.-D. Kim,
"Singlet excited state (S-1) of higher fullerenes C-76 and C-84: correlation between lifetime and HOMO-LUMO energy gap,"
. *Chem. Phys. Lett. 375*, 292-298 (2003).

Selected International Presentations

1. S. K. Kim, Y. D. Suh, S. I. Yang, S. M. Jin, , E.-j. Shin, M. Lee, D. kim, Mat. Res. Soc. Fall meeting, 1993

2. S. K. Kim, Y. D. Suh, S. I. Yang D. Kim "Time-Resolved Fluorescence and Raman Study of Orientational Ordering Transition in Fullerene Solids."
1st Korea-France Solid State Chemistry Joint Symposium, 1993

3. D. Kim, S. I. Yang, S. M. Jin and S. K. Kim, E. -j. Shin,
7th Japan-Korea Joint Symposium, 1997

4. S. I. Yang, J. Li, D. Kim, D. F. Bocian, J. S. Lindsey, D. Holten,
"Electronic Communication and Ultrafast energy transfe in porphyrin-phthalocyanine arrays", 217th Am. Chem. Soc. meeting, 1999

5. T. Balasubramanian, J. Seth, S. I. Yang, D. Kim, D. Holten, D. F. Bocian, J. S. Lindsey,
"Synthesis and electronic properties in b,b-diarylethyne-linked porphyrin
dimers", 217th Am. Chem. Soc. meeting, 1999

6. S. I. Yang, S. Prathapan, J. Seth, M. A. Miller, D. F. Bocian, J. S. Lindsey, D. Holten, "Excited state Photodynamics of Perylene-Porphyrin Arrays" XIXth International Conference on Photochemistry, 1999

7. S. I. Yang, J. Li, J. S. Lindsey, D. Holten, "Excited-State Photodynamics and Electronic Communication in a Hexamer Wheel of Porphyrin", 34th Midwest regional Am Chem Soc meeting, 1999