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OBJECTIVE

Research and development of materials based on a broad background in material chemistry, surface chemistry, electrochemistry and analytical chemistry.

HIGHLIGHTS

- Extensive experience in surface modification and metal nanoparticle preparation.
- Strong background in characterization of metal nanoparticles by electrochemical and optical method.
- Strong background in ellipsometry, spectroscopic measurement (UV-vis, FT-IR, SERS, XPS, EDS), and microscopic measurement (SEM, TEM).
- Language: Korean (mother tongue), and English (written and oral fluency).

EDUCATION

Ph.D. / Analytical Chemistry

Texas A&M University, College Station, TX (Dec.2005)

Dissertation title: "Synthesis and electrochemical characterization of highly monodisperse dendrimer-templated monolayer protected clusters."

Advisor: Prof. Richard M. Crooks

M.S. / Applied Chemistry

Ajou University, Suwon, South Korea (1999)

Thesis title: "Size selective molecular recognition from monolayers of β -cyclodextrin and p-tert-butylcalix[4]arene."

Advisor: Prof. Jae-Ho Kim

B.S. / Applied Chemistry

Ajou University, Suwon, South Korea (1997)

EXPERIENCE

2007-Present **Department of Chemical Engineering, University of California, Berkeley, CA**
Post Doctoral Associate Research on preparation and characterization of Au and Pt nanoparticle catalysts on SiO₂, TiO₂, and MgO supports.

2006-2007 **Department of Chemical Engineering, University of Rochester, Rochester, NY**
Post Doctoral Associate Research on fabrication of low temperature fuel cell membrane by utilizing hydroxyapatite as a proton channel.

AWARDS

- Best oral presentation (Korean society of industrial and engineering chemistry, Fall meeting, 1999)
- A. E. Martel travel awards at Texas A&M University (Summer, 2004 and Spring, 2005)

AFFILIATIONS

- Korean Society of Industrial and Engineering Chemistry
- Korean Chemical Society
- American Chemical Society

PUBLICATIONS

1. **Kim, Y.-G.**; Crooks, R. M. "Synthesis and characterization of covalently linked multilayer films prepared in the absence of solvent." *Langmuir* **2005**, *21*, 11262-11267.
2. **Kim, Y.-G.**; Garcia-Martinez, J.; Crooks, R. M. "Electrochemical properties of monolayer-protected Au and Pd nanoparticles extracted from within dendrimer templates." *Langmuir* **2005**, *21*, 5485-5491.
3. **Kim, Y.-G.**; Oh, S.-K.; Crooks, R. M. "Preparation and characterization of 1-2 nm dendrimer-encapsulated gold nanoparticles having very narrow size-distributions." *Chem. Mater.* **2004**, *16*, 167-172. (Cited by 65 papers)
4. Oh, S.-K.; **Kim, Y.-G.**; Ye, H.; Crooks, R. M. "Synthesis, characterization, and surface immobilization of metal nanoparticles encapsulated within bifunctionalized dendrimers." *Langmuir* **2003**, *19*, 10420-10425.
5. Kim, J.-H.; **Kim, Y.-G.**; Lee, K.-H.; Kang, S.-W.; Koh, K.-N. "Size selective molecular recognition of calix[4]arens in Langmuir-Blodgett monolayers." *Syn. Metals* **2001**, *117*, 145-148.
6. **Kim, Y.-G.**; Im, J.-H.; Lee, B.-J.; Kim, J.-H. "Spectroscopic probe of metal complexation of imidazole in the Langmuir-Blodgett monolayers." *Mol. Cryst. Liq. Cryst.* **1999**, *337*, 269-272.

SELECTED PRESENTATIONS

1. **Kim, Y.-G.**; Garcia-Martinez, J.; Crooks, R. M. "The electrochemical properties of dendrimer-templated monolayer protected clusters" The Gordon research conference on electrochemistry (Ventura, LA, February 2005).
2. **Kim, Y.-G.**; Oh, S.-K.; Crooks, R. M. "Preparation and characterization of 1-2 nm dendrimer-encapsulated gold nanoparticles having very narrow size distribution" The 78th ACS Colloid and surface science symposium (Yale University, New Haven, CT, June 2004).
3. **Kim, Y.-G.**; Crooks, R. M. "Formation and characterization of surface-confined multilayer films by vapor phase reaction" The 57th southwest regional meeting (San Antonio, TX, October 2001).

REFERENCES

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