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EDUCATIONAL PREPARATION

Ph.D. (M.S. Combined) Mechanical Engineering, Yonsei University, (S. Korea) (Feb., 2008)

Academic advisor: Professor Jungho Hwang

- Ph.D Dissertation Title: Synthesis of Nanoparticles by Electroless Deposition and/or Spark Generation and Their Applications

PROFESSIONAL EXPERIENCE

Mar., 2008 ~ *Senior Research Engineer*, LCD R&D Center in Samsung Electronics Co., Ltd. (S. Korea)

PRINCIPAL AREAS OF INTEREST

Aerosol Nanomaterials Processing, Aerosol Electric Charging, Aerosol Instrumentation, Air Quality Control, Bioaerosol Rapid Monitoring, and Non-equilibrium Plasma Devices.

HONOR/AWARD

• Marquis Who's Who (Selected for Inclusion in the Forthcoming 2011 (28th) Edition of Who's Who in the World).

JOURNAL PUBLICATIONS

21. **J.H. Byeon**, "Carbon fiber coating with silver using intervening Au/Pd nanoparticle films produced using a spark discharge" *Thin Solid Films*, in Press (doi:10.1016/j.tsf.2010.08.121).
20. **J.H. Byeon**, K.Y. Yoon, and J. Hwang, "Aerosol assisted fabrication of metallic film/carbon fiber and heat treatment to form crystalline alloy film," *Thin Solid Films*, in Press (doi:10.1016/j.tsf.2010.06.067), 2010.
19. **J.H. Byeon**, "Novel electroless copper deposition on carbon fibers with environmentally friendly processes," *Journal of Colloid & Interface Science*, 348 (2010) 649.
18. **J.H. Byeon**, "Fabrication of pure, uniform electroless silver film using ultrafine silver aerosol particles," *Langmuir*, 26 (2010) 11928.
17. **J.H. Byeon**, "Morphology and structure of aerosol carbon encapsulated metal nanoparticles from various ambient metal-carbon spark discharges," *ACS Applied Materials & Interfaces*, 2 (2010) 947.
16. **J.H. Byeon**, "Production of carbonaceous nanostructures from a silver-carbon ambient spark," *Applied Physics Letters*, 96 (2010) 153102.
15. **J.H. Byeon**, J.H. Park, Y.S. Jo, K.Y. Yoon, and J. Hwang, "Removal of gaseous toluene and submicron aerosol particles using a dielectric barrier discharger," *Journal of Hazardous Materials*, 175 (2010) 417.
14. **J.H. Byeon**, J.H. Park, K.Y. Yoon, and J. Hwang, "Ambient spark generation to synthesize carbon encapsulated metal nanoparticles in continuous aerosol manner," *Nanoscale*, 1 (2009) 339.
13. **J.H. Byeon**, R.H. Lee, and J. Hwang, "Aerosol palladium activation for electroless copper deposition and heat treatment with NO injection to fabricate Cu oxide/carbon fibre," *Journal of Physics D: Applied Physics*, 42 (2009) 055303.
12. **J.H. Byeon**, and J. Hwang, "Fabrication of a metal membrane on a perforated polymer substrate by palladium aerosol activation and subsequent electroless plating," *ACS Applied Materials & Interfaces*, 1 (2009) 261.
11. **J.H. Byeon**, and J. Hwang, "Morphology of metallic nanoparticles as a function of deposition time in electroless deposition of metal on multi-walled carbon nanotube," *Surface & Coatings Technology*, 203 (2008) 357.
10. **J.H. Byeon**, K.Y. Yoon, Y.K. Jung, and J. Hwang, "Thermophoretic deposition of palladium aerosol nanoparticles for electroless micropatterning of copper," *Electrochemistry Communications*, 10 (2008) 1272.
9. **J.H. Byeon**, J.H. Park, and J. Hwang, "Spark generation of monometallic and bimetallic aerosol nanoparticles," *Journal of Aerosol Science*, 39 (2008) 888.
8. **J.H. Byeon**, C.W. Park, K.Y. Yoon, J.H. Park, and J. Hwang, "Size distributions of total airborne particles and bioaerosols in a municipal composting facility," *Bioresource Technology*, 99 (2008) 5150.
7. **J.H. Byeon**, J.H. Park, K.Y. Yoon, and J. Hwang, "Site-selective catalytic surface activation via aerosol nanoparticles for use in metal micropatterning," *Langmuir*, 24 (2008) 5949.
6. **J.H. Byeon**, J.H. Ji, J.H. Park, K.Y. Yoon, and J. Hwang, "Charge distributions of aerosol dioctyl sebacate particles charged in a dielectric barrier discharger," *Journal of Aerosol Science*, 39 (2008) 460.
5. **J.H. Byeon**, H.S. Yoon, K.Y. Yoon, S.K. Ryu, and J. Hwang, "Electroless copper deposition on a pitch-based activated carbon fiber and an application for NO removal," *Surface & Coatings Technology*, 202 (2008) 3571.
4. **J.H. Byeon**, B.J. Ko, and J. Hwang, "Catalytic activation of activated carbon fibers via palladium aerosol nanoparticles for use in electroless silver deposition," *Journal of Physical Chemistry C*, 112 (2008) 3627.
3. **J.H. Byeon**, K.Y. Yoon, J.H. Park, and J. Hwang, "Characteristics of electroless copper-deposited activated carbon fibers for antibacterial action and adsorption-desorption of volatile organic compounds," *Carbon*, 45 (2007) 2313.
2. **J.H. Byeon**, J. Hwang, J.H. Park, K.Y. Yoon, B.J. Ko, S.H. Kang, and J.H. Ji, "Collection of submicron particles by an electrostatic precipitator using a dielectric barrier discharge," *Journal of Aerosol Science*, 37 (2006) 1618.
1. **J.H. Byeon**, J.H. Park, K.Y. Yoon, B.J. Ko, J.H. Ji, and J. Hwang, "Removal of volatile organic compounds by spark generated carbon aerosol particles," *Carbon*, 44 (2006) 2106.

& 11 co-authored international journal articles have been published

& 2 US Patents (USPTO 20080241422, USPTO 20080166500) Applied