

PARK Sung Ha

Associate Professor
Department of Physics



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Key Words DNA, Nanotechnology, Self-assembly, Pattern, Natural Algorithm

Research Area The Lab is focused on the experimental bio and nano sciences including but not limited to the followings; Structural DNA Nanotechnology, DNA Machine and Replicator, DNA Algorithm and DNA Computer, and DNA Device and DNA Sensor.

Education

- 2005 PhD Duke University, Durham, North Carolina, USA
- 2000 MSc University of Chicago, Chicago, Illinois, USA
- 1998 MSc California State University at Northridge, California, USA
- 1996 BSc California State University at Northridge, California, USA

Experience

- 2005 Jun – 2005 Sep Postdoctoral Fellow, Computer Science, Duke University, Durham, North Carolina, USA
- 2005 Oct – 2005 Dec Postdoctoral Fellow, The Center for the Physics of Information, CALTECH, California, USA
- 2008 Mar – Present Associate Professor, Department of Physics, Sungkyunkwan University

Position

- 2014 Jan - Present Associate Editor, NANO (SCIE Journal)

Selected Publication

- "Chemical and Physical Characteristics of Doxorubicin Hydrochloride Drug-Doped Salmon DNA Thin Films", Sci. Rep. 2015, 5, 12722
- "Substrate-assisted 2D DNA lattices and algorithmic lattices from single-stranded tiles", Nanoscale 2015, 7, 12336
- "Assembly of a tile-based multilayered DNA nanostructure", Nanoscale 2015, 7, 6492
- "Self-replication of DNA rings", Nat. Nano. 2015, 10, 528
- "n- and p-Type Doping Phenomenon by Artificial DNA and M-DNA on Two-Dimensional Transition Metal Dichalcogenides", ACS Nano 2014, 8, 11603
- "Energy Band Gap and Optical Transition of Metal Ion Modified Double Crossover DNA Lattices", ACS Appl. Mater. Interfaces 2014, 6, 17599
- "A 2D DNA Lattice as an Ultrasensitive Detector for Beta Radiations", ACS Appl. Mater. Interfaces 2014, 6, 2974
- "Quantitative analysis of molecular-level DNA crystal growth on a 2D surface", Sci. Rep. 2013, 3, 2115
- "A novel nanometric DNA thin film as a sensor for alpha radiations", Sci. Rep. 2013, 3, 2062
- "Magnetic Characteristics of Copper Ion-Modified DNA Thin Films", Sci. Rep. 2013, 3, 1819
- "Low-Cost Label-Free Electrical Detection of Artificial DNA Nanostructures Using Solution-Processed Oxide Thin-Film Transistors", ACS Appl. Mater. Interfaces 2013, 5, 10715
- "Size-Controllable DNA Rings with Copper-Ion Modification", Small 2012, 8, 374
- "Coverage Control of DNA Crystals Grown by Silica Assistance", Angew. Chem. Int. Ed. 2011, 50, 9145
- "Artificial DNA Lattice Fabrication by Noncomplementarity and Geometrical Incompatibility", ACS Nano 2011, 5, 5175

Others

- 2008 Mar – Present Sungkyunkwan Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University
- 2014 Mar – Present Department of Biomedical Engineering, Sungkyunkwan University