

Stephan Parker Turano**+1.404.293.2493**

EDUCATION: Georgia Institute of Technology
Master of Science, Materials Science and Engineering
Bachelor of Science, Materials Science and Engineering,

Atlanta, GA
May 2005
August 2002

LABORATORY SKILLS: Significant experience with semiconductor and nanomaterials processing, including, thin film, etch, lithography and other techniques. Mr Turano is a user of over 95 tools related to materials processing and characterization. Proficient in Microsoft Office Suite. Competent in 2D and 3D CAD in AutoCAD, Inventor and similar programs. Outstanding leadership and organization abilities. Experience in cost analysis, project timeline creation, and materials procurement.

WORK EXPERIENCE**Georgia Tech Research Institute, Atlanta GA****Research Scientist II****November 2009 –Present**

- Chief experimentalist for EOSL-MNG Nanotechnology lab group. Design and implement research experiments and improve and refine scientific processes to achieve specific research goals.
- Manage and maintain research equipment, including diagnostics and repairs on advanced semiconductor process equipment.
- Train and assist faculty and student users on research equipment.
- Identify and implement new research opportunities for nanoscale materials and devices.

Kawneer Company Inc**Norcross GA Research and Development Engineer****June 2007 – November 2009**

- Identify new and existing technologies for implementation into the company product line including polymeric thermal insulation materials, photovoltaics, specialty paints and other coatings.
- Finite element analysis of window and door components and systems to identify and improve design flaws.
- Determine best solutions for integration of new technology processes into existing manufacturing operations.
- Research and identify patentable technologies through continual intellectual property review.
- Developed project justification and tracking system for the Research and Development team in order to assess project feasibility and financial impacts.

Georgia Tech Research Institute, Atlanta GA**Research Scientist I****February 2005 –June 2007**

- Forensic analysis and characterization of unidentified polymeric materials using analytical techniques such as TGA, FTIR, EDS, and XRD.
- Analysis and characterization of metallic specimens exposed to chlorine gas and report assessment of corrosion damage.
- Characterization of nanomaterials such as CNTs, thin films, quantum dots, etc. using SEM, XRD, EDS and optical spectroscopy.
- CVD synthesis of aligned carbon nanotube arrays for use in research areas including novel photovoltaic (PV) cells, field emission arrays, chemical sensing and other applications.
- Molecular Beam Epitaxy (MBE) deposition of CdTe and CdS on carbon nanotubes (CNTs) for higher efficiency PV cells.

AWARDS: NASA Research Award for ECDL Supercapacitor Research: GTRI STAR Award: March 2013; GTRI Spot Award: October 2013; Performance bonus recipient: April 2015, November 2014, June 2012, June 2011

PUBLICATIONS

- *Carbon Nanotube Based Electrochemical Double Layer Capacitor Technology for Spaceflight Applications*, Journal of Materials 57 (2005) 26-29.
- *Chemical Vapor Deposition Synthesis of Self Aligned Carbon Nanotube Arrays*, Journal of Electronic Materials 35 (2006) 192-194.
- *Carbon Nanotube-Based Supercapacitors: Technologies and Markets*, Nanotechnology Law and Business, (2007) 585-593

- *Carbon Nanotube Arrays for Photovoltaic Applications*, Journal of the Minerals, Metals and Materials Society (2007) 39-42
- *Nanoscale coaxial cables produced from vertically aligned carbon nanotube arrays grown via chemical vapor deposition and coated with indium tin oxide via ion assisted deposition*, Carbon (2008)723-728.
- *A thin film triode type carbon nanotube field emission cathode*, Applied Physics A: Materials Science and Processing (2012) 99-104
- *The Synthesis of Carbon Nanotubes Grown on Metal Substrates: A Review*, Nanoscience and Nanotechnology Letters (2012) 1123-1131
- *Field Emission Damage Modes of Carbon Nanotube Spindt Cathode Arrays*, IEEE Transactions on Electron Devices, submitted 1/2014
- *Operations of a Carbon Nanotube Field Emitter Array in a Hall Effect Thruster Plume Environment*, IEEE Transactions on Plasma Science (2014)
- *Oxygen Plasma Resurrection of Triode Type Carbon Nanotube Field Emission Cathodes*, Diamond and Related Materials 43 (2014) 1-4

RELATED AREAS OF EXPERTISE: Physical Chemistry; Chemical Thermodynamics of Materials; Mechanical Behavior of Materials; Crystallography and Diffraction Analysis; Structural Transformation in Metals, Ceramics and Polymers; Electrical, Optical and Magnetic Properties of Materials; Ceramic Materials Properties, Processes and Applications; Electronic Application of Materials; Polymer Science and Engineering; Thermal Properties of Materials; Surface Analysis and Thin Films; Functional Materials; Diffraction Studies; Advanced Nanomaterials and Nanotechnologies; Crystallography: Structure and Defects; Transmission Electron Microscopy; Engineering Communication