

**DOCTOR OF PHILOSOPHY**

---

**APPLIED PHYSICS**

*(Degree conferred jointly by NJIT and Rutgers-Newark)*

Weizhong Chen

BS Materials Science and Engineering, Xi'an University of Technology, Xi'an, People's Republic of China  
MS Physics, Lanzhou Institute of Physics, Lanzhou, People's Republic of China

Dissertation:

*Synthesis and Characterization of Plasma Enhanced Chemically Vapor Deposited Tantalum Films*

Advisor:

*Roland A. Levy, PhD*

\* Sheng Liu

BS Space Physics, Wuhan University, Wuhan, People's Republic of China  
MS Physical Electronics, Peking University, Beijing, People's Republic of China

Dissertation:

*Physics of Flexible Sensors for Medical Applications*

Advisor:

*Gordon A. Thomas, PhD*

† Zhiwei Liu

BS Semiconductor Physics, Wuhan University, Wuhan, People's Republic of China  
MS Physics of Semiconductor Devices, Wuhan University, Wuhan, People's Republic of China

Dissertation:

*Construction of FASR Subsystem Testbed and Application for Solar Burst Trajectories and RFI Study*

Advisor:

*Dale E. Gary, PhD*

† Jun Ma

BS Aerodynamics and Flight Mechanics, Nanjing University of Aeronautics and Astronautics, Nanjing, People's Republic of China  
MS Mechanical Engineering, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:

*Design and Application of Near Infrared Tunable Filter for ATST and NST*

Advisors:

*Carsten Denker, PhD*

*Haimin Wang, PhD*

† — August 2007 graduates

\* — January 2008 graduates

---

\* Irene Adamma Nwosuh  
BS Physics, University of Nigeria, Benin, Nigeria  
MS Physics, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:  
*Development of Personal Tonometer for Measuring Intraocular Pressure*

Advisor:  
*Gordon A. Thomas, PhD*

† Yuhai Qin  
BS Physics, Nanjing University, Jiangsu, People's Republic of China

Dissertation:  
*Magnetic Ordering in  $Bi_{1-x}Ca_xMnO_3$*

Advisor:  
*Trevor A. Tyson, PhD*

\* Hui Song  
BS Electronics Engineering, Jilin University, Changchun, People's Republic of China  
MS Optics, Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Science, Changchun, People's Republic of China  
MS Computer Science, University of Bridgeport, Bridgeport, Connecticut

Dissertation:  
*Automatic Prediction of Solar Flares and Super Geomagnetic Storms*

Advisor:  
*Haimin Wang, PhD*

† Jianjun Zheng  
BS Applied Physics, Wuhan University, Wuhan, People's Republic of China  
MS Electrical Engineering, Tufts University, Medford, Massachusetts

Dissertation:  
*Design, Fabrication and Testing of a Fiber Optic Stress/ Strain Sensor for Stretchable Materials Using Polarization Imaging Technique*

Advisor:  
*John F. Federici, PhD*

---

## **BIOLOGY**

*(Degree conferred jointly by NJIT and Rutgers-Newark)*

\* Olga E. Khorkova Sherman  
BS Biology and English, Moscow State Pedagogical University, Moscow, Russia  
MS Biology and English, Moscow State Pedagogical University, Moscow, Russia

Dissertation:  
*Mechanisms of Ionic Current Changes Underlying Rhythmic Activity Recovery After Decentralization*

Advisor:  
*Jorge Golowasch, PhD*

---

## **BIOMEDICAL ENGINEERING**

\* Aysegul Ergin  
BS Electronics Engineering, Istanbul University, Istanbul, Turkey  
MS Biomedical Engineering, Bogazici University, Istanbul, Turkey

Dissertation:  
*A Laser Glucometer for Diabetes*

Advisor:  
*Gordon A. Thomas, PhD*

† Bruno A. Mantilla  
Doctor in Medicine, School of Medicine, Universidad del Rosario, Bogotá, Colombia  
MS Biomedical Engineering, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:  
*Novel Model of Cerebrospinal Fluid Dynamics Based on Hemodynamically Driven Cyclic Brain Compliance Variation*

Advisor:  
*Richard Foulds, PhD*  
*William Hunter, PhD*

---

## **CHEMICAL ENGINEERING**

† Amit Goyal  
BS Chemical Engineering, Manipal Institute of Technology, Manipal, India  
MS Chemical Engineering, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:  
*New Approaches to Scaled-Up Carbon Nanotube Synthesis and Nanotube-based Metal Composites and Sensors*

Advisors:  
*Joseph Bozzelli, PhD*  
*Zafar Iqbal, PhD*

---

Victor Stepanov  
BS Chemical Engineering, New Jersey Institute of Technology, Newark, New Jersey  
MS Chemical Engineering, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:  
*Production of Nanocrystalline Nitramine Energetic Materials by Rapid Expansion of Supercritical Solutions*

Advisor:  
*Lev Krasnoperov, PhD*

---

### **CIVIL ENGINEERING**

\* Yi Deng  
BS Transportation Engineering, Tongji University, Shanghai, People's Republic of China  
MS Transportation Engineering, Tongji University, Shanghai, People's Republic of China

Dissertation:  
*Multiclass Intermodal Network Model: The Use of Combined Model on System Evaluations*

Advisor:  
*Rongfang Liu, PhD*

---

### **COMPUTER ENGINEERING**

Muhammad Zafrul Hasan  
BS Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh  
MS Electronic Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

Dissertation:  
*Vector Customization and Reconfiguration Framework for Multi-Kernel Embedded Applications*

Advisor:  
*Sotirios G. Ziavras, PhD*

\* Xin Tang  
BS Mathematics, Peking University, Beijing, People's Republic of China  
MS Applied Mathematics, New Jersey Institute of Technology, Newark, New Jersey  
MS Computer Science, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:  
*Generalized Anomaly Detection Models for Malicious Executables*

Advisor:  
*Sotirios G. Ziavras, PhD*

---

## **COMPUTER AND INFORMATION SCIENCE**

Karen Hare

BS Business Administration and Marketing, Montclair State University, Montclair, New Jersey  
MPA Public Administration, Health Policy Planning and Administration, New York University,  
New York, New York

MS Computer Science, New Jersey Institute of Technology, Newark, New Jersey

MS Information Systems, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:

*Perception Gaps and the Adoption of Information Technology in the Clinical Health Environment*

Advisors:

*Fadi Deek, PhD*

*Brian Whitworth, PhD*

---

## **COMPUTER SCIENCE**

\* Yoo Jung An

BS Home Economics Education, Kookmin University, Seoul, Korea

MS Consumer Science, Dongguk University, Seoul, Korea

MS Computer Science, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:

*Ontology Learning for the Semantic Deep Web*

Advisor:

*James Geller, PhD*

Yan Chen

BS Sports Medicine, Beijing University, Beijing, People's Republic of China

MS Sports Medicine, Beijing University, Beijing, People's Republic of China

MS Computer Science, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:

*Abstraction, Extension, and Structural Auditing with the UMLS Semantic Network*

Advisors:

*James Geller, PhD*

*Yehoshua Perl, PhD*

† Gang Fu

BS Computer Engineering, Soochow University, Suzhou, People's Republic of China

MS Computer Engineering, Soochow University, Suzhou, People's Republic of China

Dissertation:

*Solar Activity Detection and Prediction Using Image Processing and Machine Learning Techniques*

Advisors:

*Frank Y. Shih, PhD*

*Haimin Wang, PhD*

---

† Rahul Brajesh Jain  
BS Computer Engineering, Mumbai University, Mumbai, India  
MS Computer Science, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:  
*Design and Implementation of Split TCP in the Linux Kernel*

Advisor:  
*Teunis Ott, PhD*

\* Xin Wang  
BS Computer Science, Hefei University of Technology, Hefei, People's Republic of China  
MS Computer Science, Hefei University of Technology, Hefei, People's Republic of China

Dissertation:  
*Some Combinatorial Optimization Problems on Radio Network Communication and Machine Scheduling*

Advisors:  
*Artur Czumaj, PhD*  
*Joseph Leung, PhD*

Jun Xu  
BA Economics, Shanghai Institute of Foreign Trade, Shanghai, People's Republic of China  
MBA University of Baltimore, Baltimore, Maryland  
MS Computer Science, Towson State University, Towson, Maryland

Dissertation:  
*Data Allocation in Disk Arrays with Multiple RAID Levels*

Advisor:  
*Alexander Thomasian, PhD*

† Wugang Xu  
BS Physics, Peking University, Beijing, People's Republic of China  
MS Computing Acoustics, Institute of Acoustics, Chinese Academy of Sciences, Beijing, People's Republic of China  
MS Computer Science, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:  
*Automatic Physical Database Design: Recommending Materialized Views*

Advisor:  
*Dimitrios Theodoratos, PhD*

---

**ELECTRICAL ENGINEERING**

† Naser Ahmed Chowdhury

BS Electrical and Electronic Engineering, Middle East Technical University, Ankara, Turkey  
MS Electrical Engineering, University of Texas at Arlington, Arlington, Texas

Dissertation:

*Reliability Studies of TiN/Hf-Silicate Based Gate Stacks*

Advisor:

*Durgamadhab Misra, PhD*

\* Ziqian Dong

BS Electrical Engineering, Beijing University of Aeronautics and Astronautics, Beijing,  
People's Republic of China  
MS Electrical Engineering, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:

*Architecture Design and Performance Analysis of Practical Buffered-Crossbar Packet Switches*

Advisor:

*Roberto Rojas-Cessa, PhD*

Eun Kyu Lee

BS Electrical Engineering, Seoul National University, Seoul, Korea  
MS Electrical Engineering, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:

*Optical Properties and Carrier Transport in Si/SiGe Nanostructures*

Advisor:

*Leonid Tsybeskov, PhD*

\* Chuan-bi Lin

BS Chemical Engineering, Tatung University of Technology, Taipei, Taiwan  
MS Electrical Engineering, University of Bridgeport, Bridgeport, Connecticut

Dissertation:

*Design and Analysis of Scalable Scheduling Schemes for High Speed Input-Queued Packet Switches*

Advisor:

*Roberto Rojas-Cessa, PhD*

---

\* Michael Yu-Chi Wu

BS Electrical Engineering, New Jersey Institute of Technology, Newark, New Jersey  
MS Computer and Information Science, New Jersey Institute of Technology, Newark, New Jersey  
MS Electrical Engineering, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:

*Propagation and Scattering of Beam Waves in Vegetation Using Scalar Transport Theory*

Advisor:

*Gerald M. Whitman, PhD*

Hongyan Yang

BS Electrical Engineering, Beijing University of Posts and Telecommunications, Beijing,  
People's Republic of China  
MS Electrical Engineering, Beijing University of Posts and Telecommunications, Beijing,  
People's Republic of China

Dissertation:

*Vector Support for Multicore Processors with Major Emphasis on Configurable Multiprocessors*

Advisor:

*Sotirios Ziavras, PhD*

---

#### **ENVIRONMENTAL SCIENCE**

*(Degree conferred jointly by NJIT and Rutgers-Newark)*

Florencio C. Ballesteros Jr.

BS Chemical Engineering, Saint Louis University, Baguio City, Philippines  
MS Environmental Engineering, University of Illinois, Champaign, Illinois

Dissertation:

*Projecting Land Use Changes Using Parcel-Level Data: Model Development and Application to Hunterdon County, New Jersey*

Advisor:

*Zeynan Qiu, PhD*

\* Kamilah Safiya Hylton

BS Pure and Applied Chemistry, University of the West Indies, Kingston, Jamaica  
MS Natural Resource Management, University of the West Indies, Kingston, Jamaica

Dissertation:

*Microscale Membrane Extraction for Monitoring Trace Water Pollutants*

Advisor:

*Somenath Mitra, PhD*

---

† Hao Wang  
BS Environmental Engineering, Beijing Industry and Business University, Beijing,  
People's Republic of China  
MS Environmental Science, Beijing Normal University, Beijing, People's Republic of China

Dissertation:  
*Interaction of Methoxyethyl Methyl Imidazolium(MOEMIM)- Based Ionic Liquids with Uranium  
and Its Effect on Bioreduction of Uranium*

Advisor:  
*Sanjay V. Malhotra, PhD*

---

### **INDUSTRIAL ENGINEERING**

Robert Nearier  
BA History, State University of New York-Binghamton, Binghamton, New York  
MBA Administration in Accounting, Indiana University-Bloomington, Bloomington, Indiana  
MS Manufacturing Engineering, Polytechnic University, New York, New York

Dissertation:  
*Modeling Inventory and Responsiveness Costs in a Supply Chain*

Advisor:  
*Sanchoy Das, PhD*

---

### **INFORMATION SYSTEMS**

\* Morgan C. Benton  
BA Leadership Studies and Sociology, University of Richmond, Richmond, Virginia  
MS Information Systems, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:  
*The Development and Evaluation of Software to Foster Professional Development in  
Educational Assessment*

Advisor:  
*Marilyn M. Tremaine, PhD*

† Xiaoyu Chen  
BS Management Information Systems, Beijing University of Aeronautics and Astronautics, Beijing,  
People's Republic of China  
MS Information Systems, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:  
*Designing Multimodal Interactions for the Visually Impaired*

Advisor:  
*Marilyn M. Tremaine, PhD*

---

Catherine Ann Dwyer  
BA English and Political Science, Fordham University, New York, New York  
MA Music Education, Manhattan School of Music, New York, New York  
MS Computer Science, Pace University, New York, New York

Dissertation:  
*Appropriation of Privacy Management Within Social Networking Sites*

Advisor:  
*Starr Roxanne Hiltz, PhD*

Richard William Egan  
BS Psychology, City College of New York, New York, New York  
MS Applied Psychology – Human Factors, Stevens Institute of Technology, Hoboken, New Jersey  
MBA Saint Peter's College, Jersey City, New Jersey

Dissertation:  
*The Impact of Cultural Differences in Temporal Perception on Global Software Development Teams*

Advisors:  
*Jerry Fjermestad, PhD*  
*Marilyn M. Tremaine, PhD*

Mihai Moldovan  
BS Computer Science, Technical University of Cluj-Napoca, Cluj Napoca, Romania

Dissertation:  
*Dynamics of Online Chat*

Advisor:  
*Quentin Jones, PhD*

\* Robert Jude Lutz  
BS Mechanical Engineering, Villanova University, Villanova, Pennsylvania  
MS Business Administration, Rutgers University, Newark, New Jersey

Dissertation:  
*Taux: A System for Evaluating Sound Feedback in Navigational Tasks*

Advisor:  
*Marilyn M. Tremaine, PhD*

---

\* Edward G.N. Mahinda  
BS Civil Engineering, University of Nairobi, Nairobi, Kenya  
MS Civil Engineering, Cornell University, Ithaca, New York  
MS Business Administration, Cornell University, Ithaca, New York

Dissertation:  
*User Evaluation of the Performance of Informational Systems*

Advisor:  
*Brian Whitworth, PhD*

\* Suling Zhang  
BA English Literature, China Youth College for Political Science, Beijing, People's Republic of China  
MS Information Technologies, University of North Texas, Denton, Texas

Dissertation:  
*Leader Delegation and Trust in Global Software Teams*

Advisors:  
*Jerry Fjermestad, PhD*  
*Marilyn M. Tremaine, PhD*

---

#### **MATERIALS SCIENCE AND ENGINEERING**

† Hua Ren  
BS Applied Chemistry, Shanghai Jiao Tong University, Shanghai, People's Republic of China  
MS Chemistry and Chemical Engineering, Shanghai Jiao Tong University, Shanghai,  
People's Republic of China

Dissertation:  
*Ion Assisted Magnetron Sputtering of Tantalum Thin Film Deposition and Characterization*

Advisor:  
*Marek Sosnowski, PhD*

\* Yan Sun  
BS Materials Science and Engineering, Beijing University of Aeronautics and Astronautics, Beijing,  
People's Republic of China  
MS Materials Science and Engineering, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:  
*Diaphragm-Fiber Optic Sensor for Acoustic Detection*

Advisor:  
*Ken K. Chin, PhD*

---

**MATHEMATICAL SCIENCES**

Lakshmi Chandrasekaran  
BS Mathematics, University of Madras, Madras, India  
MS Mathematics, University of Madras, Madras, India  
MS Applied Mathematics, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:  
*The Role of Short Term Synaptic Plasticity in Temporal Coding of Neuronal Networks*

Advisor:  
*Amitabha Bose, PhD*

Joon Ha  
BS Mathematics, Hanyang University, Seoul, Korea  
MS Applied Mathematics, Brown University, Providence, Rhode Island

Dissertation:  
*Roles of Gap Junctions in Neuronal Networks*

Advisor:  
*Amitabha Bose, PhD*

Nebojsa Murisic  
BS Electrical Engineering, Lamar University, Beaumont, Texas  
MS Applied Mathematics, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:  
*Instabilities of Volatile Films and Drops*

Advisor:  
*Lou Kondic, PhD*

Filippo Posta  
BS Mathematics, University degli Studi di Siena, Italy  
MS Computational Biology, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:  
*Signal Transmission in Epithelial Layers*

Advisor:  
*Cyrill B. Muratov, PhD*

---

## **MECHANICAL ENGINEERING**

Oleksandr M. Dybenko

BS Applied Physics and Mathematics, Moscow Institute of Physics and Technology, Moscow, Russia

MS Applied Physics and Mathematics, Moscow Institute of Physics and Technology, Moscow, Russia

Dissertation:

*Density Relaxation of Granular Matter Through Monte Carlo and Granular Dynamics Simulations*

Advisor:

*Anthony Rosato, PhD*

Veljko Samardzic

BS Aeronautical Engineering, Belgrade University, Belgrade, Yugoslavia

BS Mechanical Engineering, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:

*Micro, Meso, and Macro Material Processing Using High-Speed Liquid Projectiles*

Advisor:

*Ernest S. Geskin*

---

## **TRANSPORTATION ENGINEERING**

Godson A. Tetteh

BS Master Mariner – Class 1 Deck Officer, Regional Maritime Academy, Accra, Ghana

MS International Transportation Management, State University of New York - Maritime College, Bronx, New York

Dissertation:

*Optimal Allocation of Blood Products*

Advisor:

*Jian Yang, PhD*

\* Yi-Min Tang

BS Highway Engineering, Southeast University, Nanjing, People's Republic of China

MS Highway Engineering, Southeast University, Nanjing, People's Republic of China

MS Transportation, New Jersey Institute of Technology, Newark, New Jersey

Dissertation:

*Optimized Scheduling of Highway Work Zones*

Advisor:

*J. Steven Chien, PhD*