Pubudu Goonetilleke

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Education

08/03 – to date	**Ph.D. in Physics** (December 2008, expected) – Clarkson University, NY	GPA : 3.7/4
Thesis title	Electrochemical Investigations of Advanced Materials for Microelectronic and Energy Storage Devices	
08/03 – 05/05	**M.S. in Physics** – Clarkson University, NY	GPA : 3.7/4
09/97 – 01/02	**B.S. in Physics** (Honors, Mathematics minor), University of Colombo, Sri Lanka	
Thesis title	A low cost telephone-interfaced equipment protector and a PC based low cost data acquisition system for physics applications	

Research Experience

- **E**lectro**C**hemical **M**echanical **P**lanarization and **C**hemical **M**echanical **P**lanarization of electronic materials
  - *Investigation of chemicals on planarization efficiency and polish rate of Cu*
  - *Electrochemical removal of Copper with pulsed anodic polarization*
  - *Effect of inhibitors in CMP and ECMP*
- Electrochemical impedance spectroscopy, potentiostatic and galvanostatic techniques
- Preparation of chemicals and materials
  - *Preparation of aqueous and non aqueous solutions under controlled environmental conditions*
- Characterization of Ionic Liquids with Carbon NanoTubes for supercapacitor applications
  - *Characterization of interfacial interactions in solid electrodes and liquid ILs*
- Characterization of electrode and electrolyte materials for Li-ion batteries and supercapacitors
  - *Investigation and comparison of standard and ionic liquid based electrolytes for batteries*
  - *Investigation of lithium ion cathode materials and diffusivity in cathode materials*
- Thin film electrode preparation for Li-ion battery and supercapacitor applications

Technical skills

- Design and construction of CMP and ECMP tools
- Sound knowledge in digital electronics with data acquisition and PC interfacing
- Embedded system design with micro processors
- Design and construction of electrochemical cells and accessories for various applications
- Design and construction of electronic interfaces for automating experiments with remote control functions
- LabView and its applications with National Instrument's data acquisition boards and other equipment
- Basic machine shop operations

Computer skills

- **LabView**, **MultiSim/UltiBoard**, Borland Delphi, **CorrWare**, **ZPlot**, **ZSimWin** and **V3 studio electrochemical software**
- Visual Basic, C-sharp, Visual C++ in Visual studio, MATLAB and MS Office
- Microcontroller programming with C
- Knowledgeable in Computer networking and troubleshooting
- Maintained computer hardware and software for physics department teaching laboratories and in own research laboratory

Teamwork and management experience

- Teamwork with other graduate and undergraduate students in our group at Clarkson University
- Team work with graduate students from department of chemical engineering at Clarkson University
- Maintained and organized inventory and purchase records for all laboratory supplies and equipment for our research lab at Clarkson University

Patent

- Dual color graphic LED display board (Patent filed in 2008, Sri Lanka) – *Design is in production*