

## Curriculum Vitae

1. Name: **Sumana Chowdhuri**
2. Designation: **Professor, Electrical Engineering**
3. Affiliation: Department of Applied Physics, University of Calcutta, Kolkata, India
4. Position: **Professor & former Head, Department of Applied Physics, University of Calcutta, Kolkata, India.**
5. Areas of Research:

**Renewable Energy Sources Conversion, Power Electronics Converters and Electrical Machine Drives, Microgrid, Embedded System,**

6. Research Group: **Power Electronics Application Research Group**

Contributors:

- 1) Mr. Dipak Kumar Mandal, Assistant. Prof. Applied Physics Department
- 2) Dr. Binoy Kumar Karmakar, Asst. Professor, Applied physics Department
- 3) Prof. Sujit K. Biswas, Former prof. Jadavpur University,
- 4) Prof. Shibsankar Saha, Professor and Head, Kalyani Govt. Engineering College, Kalyani
- 5) Mr. Dipten Maity, Assistant professor, Jadavpur University

6. Sponsored Project

- i. **“Development of SMART Grid-interactive SPV Systems”** from Department of Science & Technology, Ministry of Science & Technology, Government of India, vide. Memo No. **DST/TM/SERI/D31(G) dtd: 10/08/2016, sanction amount: INR: 94,30,000.00**

Consortium partners: **University of Calcutta, Kalyani Govt. Engg. College, Jadavpur University, IEST, Shibpur, St. Thomas College of Engg. and Technology, Statcon Energiaa Pvt. Ltd., Noida, U.P as Technical Collaborator.**

- ii. **“Development of Compact and Efficient Grid Tied Solar Powered Inverter (SPI) Systems”** from Department of Science & Technology, Ministry of Science & Technology, Government of India, Sanction Detail: **DST/TMD/CERI/RES/2020/22(G) dtd: 03/09/2021, sanction amount: INR. 1,28,808.00**

Consortium partners: **University of Calcutta, Kalyani Govt. Engg. College, Jadavpur University, IEST, Shibpur, St. Thomas College of Engg. and Technology, Statcon Energiaa Pvt. Ltd., Noida, U.P as Technical Collaborator.**

- iii. **“Development of Remote Energy Metering System towards the Estimation of Zonal Energy Consumption with AMR”, CPRI, Ministry of Power, Sanction year 2011-2013**

7. Patent/Copyright/Technology Transfer:

**“Development of Remote Energy Metering System towards the estimation of Zonal Energy Consumption with AMR”, Patent file no.967/KOL/2015dated09/09/2015, Prof. J.N.Bera, Dr. S. Chowdhuri with J. Sundara Rajan, CPRI Bangalore.**

**8. Consultancy works:**

1. **Design and Development of Train Speed measurement unit and relay testbed.**

**Co: Indian Railway & M/SHilton Pvt.Ltb,2009**

2. **Design and development of Head code Display**

**Co: Indian Railway & M/SHilton Pvt.Ltb,2009**

**9. Ph. D Guidance:1 Awarded/Submitted: Registered:8; Enrolled: nil**

Dr. Ms Jinia Das, Principal, Camellia Institute of Engineering &Technology, West Bengal-713403.Registration No.: 2086/PhD (Tech)/proceed 2012 awarded in 2015

Title: Development of PC based Remote Multi-Machine Monitoring System towards Preventive Maintenance Facility.

Registered:

- i. Ms. Tista Banerjee : “Intelligent Control of Induction Motor Drive” , 2090 Ph.D. (Tech) Proceed/12
- ii. Mr. Jayanta Mukhopadhyay :“ Design and Performance Study of Adjustable Speed Smooth Torque Switch Reluctance Motor Drive”, 2065 Ph.D (Tech) Proceed/12
- iii. Pritha Roy: “Remote Monitoring and Performance Analysis of Micro Grid Under Different Operating Conditions”
- iv. Dipak Kumar Mandal, “Development of an Efficient SPV System”, 2488/Ph.D.(Tech.)Proceed/2019
- v. Aurobindi Chandra,” Rotor Position Sensor-Less Vector Control of Surface PM Synchronous Motor for Standstill to Rated Speed Operation:, 02488/Ph.D.(Tech.)Proceed/2019
- vi. Soumyajit Datta, “Design and Implementation of Efficiency Optimized Advanced Sensorless V/Hz Controlled Surface PM Synchronous Motor Drive”, 02488/Ph.D.(Tech.)Proceed/2019
- vii. Arkendu Mitra, “High Performance of a Three-Phase Active Front-End PWM Rectifier”02488/Ph.D.(Tech.)Proceed/2019

- viii. Sarbojit Mukherjee,” Improved Performance Soft-Switched DC/DC Converter Integrating SPV-MPPT controller and Battery Charger”,

10. Employment Details

Position	Institute	Duration
<b>Professor</b>	<b>Department of Applied Physics, university of Calcutta</b>	<b>2016 -till date</b>
<b>Associate Professor</b>	<b>Department of Applied Physics, university of Calcutta</b>	<b>2013-2016</b>
<b>Assistant Professor: Grade II</b>	<b>Department of Applied Physics, university of Calcutta</b>	<b>2010-2013</b>
<b>Senior Lecturer</b>	<b>Department of Applied Physics, university of Calcutta</b>	<b>2005-2010</b>
<b>Lecturer</b>	<b>Leather Technology, Govt. of West Bengal</b>	<b>2005</b>
<b>lecturer</b>	<b>B. P. Poddar Institute of Technology</b>	<b>2002-2005</b>

11. Educational Qualification:

Degree	Institute	Year
<b>PhD( Engineering)</b>	<b>Jadavpur University</b>	<b>2002</b>
<b>M.E.E</b>	<b>Jadavpur University</b>	<b>1997</b>
<b>B.E.E</b>	<b>Jadavpur University</b>	<b>1993</b>

12. Personal Information:

- i. Address for Correspondence:

**Department of Applied Physics, University of Calcutta, 92APC Road,  
Kolkata700009,**

**ii. Contact No.:9433123854**

**iii. Email Address: [scaphy@caluniv.ac.in](mailto:scaphy@caluniv.ac.in)**

12. Member of Professional Bodies:

**Member, IAS, IEEE**

13. List of Publications:

**i. Journal:**

1. *“Sensor-less Vector Control of Surface PM Synchronous Motor by SMO-QPLL and HF Signal Injection based Hybrid Estimation Technique”*, Arabindo Chandra, Soumyajit Datta and Sumana Chowdhuri, Journal of Electrical Engineering & Technology, Springer, March 2022, DOI:10.1007/s00202-022-01530-7
2. *“Sensorless vector control of PM synchronous motor by hybrid estimation technique considering effect of non-ideal physical attributes”*, Arabindo Chandra, Soumyajit Datta, Sumana Chowdhuri, Journal of Electrical Engineering & Technology, Springer, march 2022.
3. *“High performance sensor-less V/f control of surface PMSM in voltage vector plane with ZVV injection and SMO-based position estimation method”*, Soumyajit Datta, Arabindo Chandra and Sumana Chowdhuri, Springer, April 2022, DOI:10.1007/s00202-021-01325-2, Vol 104 , Issue 2, PP 657-666
4. *“High-Performance Control of Surface PM Synchronous Motor by Power Factor Angle-Based Control of Stator Voltage Vector”*, Soumyajit Datta, Arabindo Chandra, Sumana Chowdhuri, Journal of Control, Automation and Electrical Systems, Springer US, 2021 Print ISSN 2195-3880, Vol 32, Issue 3, June, 2021, pp 703-710
5. *“Performance Evaluation of CKF Based Sensorless Vector Controlled PM Synchronous Motor Drive”*, A Chandra, S Datta, A Dey, S Chowdhuri, Journal of Electrical Engineering & Technology, Volume 16, Issue 2, Springer Singapore, March, 2021 , pp 889-897, SCIE
6. *“Active Cell Balancing of Lithium-ion Battery Pack Using Dual DC-DC Converter and Auxiliary Lead-acid Battery”*, A Samanta, S Chowdhuri, Journal of Energy Storage, volume 33, Elsevier, 2021, pp102-109
7. *“Design and Implementation of Hybrid Self-Control Scheme for PM Synchronous Motor Drive”*, Arabindo Chandra, Soumyajit Datta, Sumana Chowdhuri, Journal of The Institution of Engineers (India): Series B, (), 1-7, DOI 10.1007/s40031-021-00580-y, pp-671-677

8. “*Machine Learning-Based Data-Driven Fault Detection/Diagnosis of Lithium-Ion Battery: A Critical Review*”, Akash Samanta, Sumana Chowdhuri and Sheldon S. Williamson, *Electronics* 2021, MDPI, 10(11), 1309; doi:10.3390/electronics10111309
9. “*Solar PV Battery Charger Using MPPT-Based Controller*”, Shreya Das, Avishek Munsri, Piyali Pal, Dipak Kumar Mandal, Sumana Chowdhuri, book: *Advances in Control, Signal Processing and Energy Systems*, Springer, pp 169-182,
10. “*Analysis of single phase PWM rectifier for different applications*”, Arkendu Mitra, Sumana Chowdhuri, *Journal of The Institution of Engineers (India): Series B, Volume 98, Issue 2*, springer, 2017, pp 161-169
11. “*Channel Efficiency with Security Enhancement for Remote Condition Monitoring of Multi Machine System Using Hybrid Huffman Coding*”, Jinia Datta, Sumana Chowdhuri, Jitendra nath Bera, Vol 47, Issue 4, Springer, PP 469-480
12. “*Remote monitoring of different electrical parameters of multi-machine system using PC*”, Datta (Das), Jinia, S Chowdhuri, J Bera, G Sarkar, *Measurement* 45 (1), 118-125.
13. “*A simplified state-of-the-art Sample Shifting technique for microcontroller based single phase power measurement*” R Saha, J Bera, G Sarkar, S Chowdhuri, A Deb, *Measurement* 58, 459-467, pp 459-467, *Measurement (Elsevier)*, Volume 58, Issue 1, 2014.
14. “*A Novel Standalone and GRID-tied Single Phase SPWM Inverter*”, D Bhattacharya, D Hazra, PP Das, S Chowdhuri, *International Journal of Applied Engineering Research* 9 (3), 267-274.

**ii.** Conference:

1. “*Design of Duty-Ratio and Phase-Shift Control Circuits for MPPT of SPV Source using ZV-ZCS PSFB Converters*”, Sarbojit Mukherjee, Shib Sankar Saha, Sumana Chowdhuri, 2021 *Devices for Integrated Circuit (DevIC)*, DOI: 10.1109/DevIC50843.2021.9455893
2. “*A Soft-Switching DC-DC Boost Converter for Extracting Maximum Power from SPV Array*”, Dipak Kumar Mandal; Sumana Chowdhuri; Sujit K Biswas; Shib Sankar Saha, 2020 *IEEE 5th International Conference on Computing Communication and Automation (ICCCA)*, DOI: 10.1109/ICCCA49541.2020.9250818
3. “*ZigBee Based Real Time Energy Monitoring for Preventive Maintenance of Solar Photovoltaic System*”, Dipak Kumar Mandal, Rakesh Das, Sumana Chowdhuri, 6th *International Conference on Nanoelectronics, Circuits & Communication Systems* 19th -20th December, 2020
4. “*Improved Droop Control Strategy for Single Phase Micro-Grid Inverters in Stand-Alone Mode*”, Santanu Bera; Dipak Kumar Mandal; Sumana Chowdhuri, 2019 *International Conference on Computing, Power and Communication Technologies (GUCON)*,
5. “*Efficient Power Extraction from SPV system in Partially Shaded Condition: A Comparative Study between Classical and Fuzzy logic Control*”, Dipak Kumar Mandal, Sumana Chowdhuri,

Shib Sankar Saha, Biswajit Majumdar, Dipten Maiti, Sujit Kumar Biswas, Fifth IEEE International conference on Emerging Application of IT(EAIT),2018, DOI: 10.1109/EAIT.2018.8470408.

6. “*Solar PV Battery Charger Using MPPT Based Controller,*” Shreya Das, Avishek Munsu, Piyali Pal, Dipak Kumar Mandal, Sumana Chowdhuri, *National Conference on Control, Signal Processing and Energy systems (CSPES2018), November 16<sup>th</sup>-18th, 2018.*
7. “*Performance Analysis of a Micro Grid VSI under Asymmetric Conditions,*” Abhishek Majumder, Souvik Roy and Sumana Chowdhuri, published in IEEE Conference proceedings of 2018 Power Electronics, Drives and Energy System Conferences (PEDES2018), 2018