

Date: 28/09/2015

CURRICULUM – VITAE

Name: Manoj Kumar Singh

Personal Information:

Date of Birth: 03/10/1987

Citizenship: Indian

Present Position: Assistant Professor (Ad-hoc)

Official Address: Department of Physics,
Swami Shraddhanand College
Alipur, New Delhi, Delhi-110036,

Address for Correspondence: Ro-183, Jubilee Hall
University of Delhi, Delhi-110007, India

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E-mail address: mmanoj.ssi@gmail.com

Date of Appointment in the College: 22/07/2015

Total Teaching Experience: 1 month

Native Place: Attarra (Banda), U.P.

Education:

Course	Year	University	Subject	Percentage (%)	Division
B.Sc.	2008	University of Allahabad	Physics, Chemistry, Mathematics	68.59	I st
M.Sc.	2010	University of Delhi	Physics (Specialization: Electronics)	73.70	I st
Ph.D.	2015	University of Delhi	Physics (Condense matter Physics)	Thesis submitted on 10/07/2015 (Thesis Title: Gel Polymer Electrolytes Based Electrical Double Layer and Hybrid Supercapacitors)	

Fellowship and Awards: (including convener/co-convener/member organizing committees etc for International and national conferences/workshops/seminars)

International /National Positions and/or Awards/ Fellowships

- Junior research Fellowship conducted by Council of Scientific and Industrial Research (CSIR) Govt. of India held on 17/06/2012, Roll no- 510517 qualified with rank **196/317**.
- Joint Entrance Screening test (JEST-2012) held on 19/02/2012; Registration no- P1005040, conducted by Indian Institute of Science (IISc), Bangalore qualified with Rank-**67**.
- Graduate Aptitude Test in Engineering (GATE-2012): Registration no- PH3055244 with GATE Score- 386 and Rank- **484/6317**, conducted by Indian Institute of Technology Delhi (IITD), India.
- Joint Entrance Screening test (JEST-2010) held on 19/02/2012 Registration no- 111830, conducted by Institute of Mathematical Science (IMSc), Chennai qualified with Percentile - **98.56**.
- Graduate Aptitude Test in Engineering (GATE-2010): Registration no- PH3074258 with GATE Score- 366 and Rank- **630/5578**, conducted by Indian Institute of Technology Guwahati (IITG), India.
- Selected as Junior Research Fellow (Non-NET-2010) for pursuing Ph.D. in University of Delhi, New Delhi, India.

List of Students Awarded Ph.D./M/Phil.: *N.A.*

List of Students Pursuing Ph.D./M.Phil. : *N.A.*

List if Students guided for /M.Tech./B.Tech/B.Sc./M.Sc./B.A./M.A. Projects etc.: *No*

List of students guided for Summer projects: *No*

List of Students guided for Innovation Projects: *No*

REVIEWER INTENATIONAL/National JOURNALS: *No*

Member International/National Journal editorial Board etc.: *No*

Research Projects/ Innovation Projects Undertaken: *No*

(i) **Completed**

(ii) **Ongoing**

Research Interest:

- Energy Materials and Electrochemical Power Sources viz. rechargeable batteries, supercapacitors
- Rechargeable batteries (Magnesium Batteries, Sodium Polymer Batteries, Lithium Ion Batteries).
- Ionic liquid based gel polymer electrolytes (new generation materials for energy conversion and storage-greener approach) for batteries and supercapacitors applications.
- Carbon and carbon polymer composites for energy storage technology.
- Characterization technique (Materials & Devices) like ionic conductivity and Interfacial Polarization Resistance by Impedance Spectroscopy, Transport No, Cyclic Voltammetry, Charge-discharge.
- Interfacial Studies of electrode/electrolyte by theoretical model viz. Z-view.

Computer Literacy: (Softwares etc. used /working knowledge)

Microsoft office, C and C++, Z-view, Impedance Spectroscopy, Cyclic Voltammetry and Galvanostatic Charge-discharge

Contribution in International Conferences/Seminars/Workshops:

1. '4th International Conference on Electroactive Polymer: Materials & Devices (ICEP 2010)', Surjkund (India), 21-26 Nov. 2010 attended.
2. '5th International Conference on Electroactive Polymer: Materials & Devices (ICEP-2012)', Varanasi, 04-09 Nov-2012. Paper entitled 'Electric double layer capacitors based on ionic liquid gel polymer electrolyte: A comparative study with Graphene and MWCNT electrodes
3. 'Indo-German Workshop on Advanced Materials for Future Energy Requirements (WAMFER 2012)' 29 Nov-01Dec 2012, attended.

4. '14th International Symposium on Polymer Electrolyte (ISPE-2014)', Geelong Australia, 24-29th August. Paper entitled "Performance of hybrid supercapacitor fabricated with gel polymer electrolyte and LiFePO₄/MWCNTs as cathode" presented by Dr. S. A. Hashmi.
5. 'JAIST Japan-India Symposium on Materials Science' 02-03th March 2015 Ishikawa, Japan following paper was presented in the form of a poster presentation: Lithium Iron Phosphate and Activated Carbon Composite as Cathode for a Hybrid BatCap System
6. '2nd Indo-German workshop on Supramolecular Chemistry', University of Delhi, Delhi, 30th March-2015. Paper entitled "Solvothermal synthesis of surfactant-free SnS nanorods with better electrochemical properties towards supercapacitor applications " presented by H. Chauhan

Contribution in National Conferences Seminars/Workshops:

1. '4nd International Conference on Electroactive Polymer: Materials & Devices (ICEP 2010)', Surjkund (India), 21-26 Nov. 2010 attended.
2. 1th National Conference on Recent Advances in polymer Nanocomposites (NCPN-2011), Department of physics, Zakir Husain college University of Delhi-07 (India), 14-15 Jan-2011 attended.
3. Workshop on XRD, Department of Physics & Astrophysics, University of Delhi, Delhi- 07, 17-18 March, 2011 attended.
4. 9th National Conference on Solid State Ionics', Jaypee Institute of Information Technology, Noida (India), 15-17 Dec. 2011, following paper was presented in the form of a poster presentation: Studies on ionic liquid as a binder component for high performance supercapacitor carbon electrodes.
5. National Workshop on Energy/Conversion Devices Using ion conducting polymer electrolytes (NWESD-2012), Guna 10-12 Dec.2012, attended.
6. 10th National Conference on Solid State Ionics', Indian Institute of Technology Kharagpur (India), 22-24 Dec-2013, Following two papers were presented:
 - i. Performance of hybrid supercapacitors fabricated with proton-battery anode and gel polymer electrolyte as a poster.
 - ii. Solid-state hybrid supercapacitors with LiFePO₄/AC cathode and nano Li₄Ti₅O₁₂ anode as an oral.
7. 'Advanced Workshop on Broad Band Dielectric Spectroscopy-2014, Department of Physics & Astrophysics, University of Delhi, Delhi- 07, 17-18 Jan 2014 attended.

8. 59th DAE Solid State Physics Symposium (DAE-SSPS, 2014) VIT, Vellore, 16-20 Dec-2014. Paper entitled “Performance of Electrical Double Layer Capacitors Fabricated With Gel Polymer Electrolytes Containing Li⁺ and K⁺-Salts: A Comparison” was presented.
9. ‘Workshop on Spectro-Electrochemistry’ organized by Department of Chemistry, University of Delhi, 17-18 June 2015, attended.

LIST OF PUBLICATION (with title of the papers/articles, list of authors along with journal title, year of publication, ISSN/ISBN No. and Impact factor) :

Research paper published in SCI Journals

1. ‘Bucky gel’ of multiwalled carbon nanotubes as electrodes for high performance, flexible electric double layer capacitors
Manoj K. Singh, Yogesh Kumar and S. A. Hashmi
Nanotechnology 24 (2013) 465704 (10pp), Online ISSN: **1361-6528**, impact factor: **3.82**
2. A novel supercapacitor configuration with plastic crystal based gel polymer electrolyte and graphene nano-platelets as electrodes: A high rate performance
Manoj K. Singh, Mohd. Suleman, Yogesh Kumar and S. A. Hashmi
Energy 80 (2015) 465-473, Online ISSN: **0360-5442**, impact factor: **4.84**
3. Synthesis of surfactant free SnS nanorods by solvothermal route with better electrochemical properties towards supercapacitor application
Himani Chauhan, **Manoj K. Singh**, S.A. Hashmi, Sasanka Deka
RSC Advances 5 (2015) 17228-17235, Online ISSN: **2046-2069**, impact factor: **3.84**
4. Performance of hybrid supercapacitor fabricated with gel polymer electrolyte and LiFePO₄/MWCNTs as cathode
Manoj K. Singh and S. A. Hashmi
Journal of Energy Chemistry (Communicated)
5. Ionic liquid based sodium ion-conducting composite gel polymer electrolytes: Effect of active and passive filler dispersion
S. A. Hashmi, Mohd. Yasir Bhat, **Manoj K. Singh**, N. T. Kalyana Sundaram, Bala P. C. Raghupathy, and Hideaki Tanaka
Journal of Solid State Electrochemistry (Communicated)

List of Books/Monographs Published (along with the Publisher’s name and ISBN No. and year of Publication): *No*

Articles in Edited Books/Conference Proceedings/Book Chapter Published(along with title of the book, publisher and ISBN No and year of publication).

Articles in Conference Proceedings

1. Electrochemical Supercapacitors: Fundamental and Recent Advances
S. A. Hashmi, **Manoj K. Singh** and Yogesh Kumar
Chapter in Learning manual, National Workshop on Energy Storage/Conversion Devices Using Ion Conducting Polymer Electrolytes (NWESD-2012), Department of Physics, Jaypee University of Engineering & Technology, Guna, M. P., INDIA
2. Electrochemical supercapacitors: Towards solid state type Configuration with polymer based electrolytes
S. A. Hashmi, **Manoj K. Singh**, Sellam, Mohd. Suleman and Yogesh Kumar
Electroactive Polymers Materials and Devices-Volume-5 (2015), ISBN-978-81-8424-960-6; Edited by S.A. Hashmi, R.K. Singh, Amita Chandra, Amreesh Chandra, 49-67, Allied publication
3. Performance of Electrical Double Layer Capacitors Fabricated with Gel Polymer Electrolytes Containing Li^+ and K^+ Salts: A Comparison
Manoj K. Singh and S. A. Hashmi
American Institute of Physics (59th Solid State Physics Sumposisum-2014)
Edited by Dr. Bhattacharyya, R. Chitra, N.K. Sahoo, 060011-1–060011-3; doi: 10.1063/1.4917846

Journal Proceedings/ Journals Edited (with title of the journal , year of publication etc.)

No

Popular articles published / Articles published in newspapers etc. No

Professional Association and Membership of Learned Bodies:

1. Life member, Indian Solid State Ionics Society

Any Other information: