CURRICULUM VITAE

PERSONAL DETAILS:

PHOTOGRAPH:

Salutation	**Dr.**	**First Name**	**VARUN**	**Middle Name**	**KUMAR**	**Last Name**	**SINGH**		
Father's Name			**RANJEET SINGH**						
Mother's Name			**SUNITA DEVI**						
Date of Birth			Jan., 20, 1990	**Age at Present**	32year, 3 month 08days	**Place of Birth**	Jaunpur		
Nationality			INDIAN			**Sex**	Male	**Specimen Signature**	
Mobile:			09415552268 08429327875	**Email:**	varunkumarsingh968@gmail.com varun.singh@bhu.ac.in				
Present address of Residence			**Lucky & Micky, 10/13A, Vijay Nagar, Double Storey, Delhi-110007**						
Postal (Mailing) Address			**Lab P-2**5 C/o Prof Amita Chandra, Department of Physics and Astrophysics, University of Delhi, Delhi-110007						
Permanent Address			**Village. Charai Dhekaha, Post. Kuttupur, District. Jaunpur, Uttar Pradesh, Pin-Code.222161**						
Marrital Status			**Married**						

ACADEMIC DETAILS:

Academic Level	Passing Year	Board / University	Percentage
DSKPDF	**Pursuing (From Oct., 01, 2021 to till now)**	Department of Physics and Astrophysics, University of Delhi, Delhi-110007	
Ph.D.	**Awarded(30-07-2019)**	Banaras Hindu University, Varanasi	
NET	June 2012	CSIR	
M.Sc.	2011	V.B.S. Purvanchal University, Jaunpur	56.5%
B.Sc.	2009	V.B.S. Purvanchal University, Jaunpur	61.66%
Intermediate	2006	U.P. Board, Allahabad	75.8%
High School	2004	U.P. Board, Allahabad	69.15%

RESEARCH DETAIL:

Research Topic	**Studies on Ionic Liquid Based Electrolytes for Application in Rechargeable Battery**

Supervisor (PhD & DSKPDF)	**(1) Prof.Rajendra Kumar Singh**, Department Of Physics, Institute of Science, Banaras Hindu University, Varanasi-221005. **(2) Prof. Amita Chandra**, Department of Physics & Astrophysics, University of Delhi, Delhi-110007.
Date of Admission	**April, 29, 2013. (March. 2013 Session)**
h-index & i10-index	**16 & 18**
Total Citation	**710**
Award/Fellowship:	• Young scientist award for best poster presentation in NCSSI-11 held at Tezpur University, Assam, India (2015). • UGC research Fellowship (1 Sep., 2013- 22 Aug., 2015). • DST-SERB Junior research Fellowship (from 23 Aug., 2015-22 July 2017). • CSIR Senior research Fellowship (from 1 May, 2018 – July 30 2019).

CONFERENCES AND WORKSHOPS ATTENDED:

1.	**7th** One Day Conference on **'New Trends in Research'** organized by **Department of Physics, BHU**, Varanasi-221005 on 18th Feb, 2014 **(Participated).**
2.	**8th** One Day Conference on **'New Trends in Research'** organized by **Department of Physics, BHU**, Varanasi-221005 on on Feb, 07 , 2015.**(Poster Presentation)**
3.	**9th** One Day Conference on **'New Trends in Research'** organized by **Department of Physics, BHU**, Varanasi-221005 on Feb, 07 , 2015.**(Poster Presentation)**
4.	Attended and presented a Poster on **"Eleventh national conference on solid state ionics (NCSSI-11)"** organized during December 21-23, 2015 in Tezpur University, Asam, India.
5.	Centenary year one day conference on **'New Trends in Research'** organized by Department of Physics, Institute of Science, BHU, Varanasi-221005 on Feb., 20, 2016. (Poster presentation).
6.	Attended and presented a poster on **"6th international conference on functional electroceramics and polymers (ICEP-2017)" organized during February 20th-22nd, 2017, Department** of Physics, Indian institue of technology Kharagpur, India.
7.	**10th** One Day Conference on **'New Trends in Research'** organized by **Department of Physics, Institute of Science, BHU**, Varanasi-221005 on March, 04 , 2017.**(Poster Presentation)**
8.	Attended and presented a poster **"21st International Conference on Solid State Ionics-SSI-21"** held at Padova Fiere in Padova (Italy) from 18 to 23 June 2017.
9.	Attended and presented a poster "**1st World Conference on Solid Electrolytes for Advanced Applications: Garnet and Competitors**" held at Department of Physics, Pondicherry University, India in association with Energy Science Society of India, from 6-9, September 2017.
10.	Attended and presented a Poster on **"12th National conference on solid state ionics (NCSSI-11)"** organized during December 21-23, 2017 in BITs Pilani, Rajasthan, India.

Publications	1. Electrochemical investigations of $Na_{0.7}CoO_2$ cathode with PEO-NaTFSI-BMIMTFSI electrolyte as promising material for Na-rechargeable battery, **Varun Kumar Singh**, S K Singh, H Gupta, Shalu, L Balo, A K Tripathi, Y L Verma & R K Singh, **Journal of Solid State Electrochemistry**, 22, (2018), 1909-1919. 2. Solid polymer electrolytes based on Li+/ionic liquid for lithium secondary batteries, **Varun Kumar Singh**, Shalu, L. Balo1, H. Gupta, S.K. Singh & Rajendra Kumar Singh*, **Journal of Solid State Electrochemistry**, 21(6), (2017), 1713-1723. 3. Development of ionic liquid mediated novel polymer electrolyte membranes for application in Na-ion batteries, **Varun Kumar Singh**, Shalu, Sujeet Kumar Chaurasia and Rajendra Kumar Singh*, **RSC Advances**, 6, (2016), 40199–40210. 4. Improved electrochemical performance of EMIMFSI ionic liquid based gel polymer electrolyte with temperature for rechargeable lithium battery**,** Shishir Kumar Singh, Himani Gupta, Liton Balo, Shalu, **Varun Kumar Singh**, Alok Kumar Tripathi, Yogendra Lal Verma**,** Rajendra Kumar Singh**, Energy**, 150 (2018), 890-900. 5. Electrochemical characterization of ionic liquid based gel polymer electrolyte for lithium battery application, Shishir Kumar Singh, Himani Gupta, Liton Balo, Shalu, **Varun Kumar Singh,** Alok Kumar Tripathi, Yogendra Lal Verma, Rajendra Kumar Singh**, Ionics**, 24, (2018),1895–1906**.** 6. Development of ion conducting polymer gel electrolyte membranes based on polymer PVdF-HFP, BMIMTFSI ionic liquid and the Li-salt with improved electrical, thermal and structural properties, Shalu, **Varun Kumar Singh** and Rajendra Kumar Singh*, **J. Mater. Chem. C**, 3, (2015), 7305-7318. 7. Flexible gel polymer electrolyte based on ionic liquid EMIMTFSI for rechargeable battery application, Liton Balo, Shalu, Himani Gupta, **Varun Kumar Singh**, Rajendra Kumar Singh*, **Electrochimica Acta**, 230, (2017), 123–131. 8. Preparation and properties of titania based ionogels synthesized usin gionic liquid 1-ethyl-3-methyl imidazolium thiocyanate, Y.L. Verma, A.K. Tripathi, Shalu, V.K. Singh, L. Balo, H. Gupta, S.K. Singh, R.K. Singh*, **Material science and engineering B**, 220, (2017) 37-43. 9. Effect of phosphonium based ionic liquid on structural, electrochemical and thermal behavior of polymer poly(ethylene oxide) containing salt lithium bis(trifluoromethylsulfonyl)imide, Himani Gupta, Shalu, Liton Balo, **Varun Kumar Singh**, Sujeet Kumar Chaurasia and Rajendra Kumar Singh*, **RSC**

Advances, (2016) 6, 87878–87887.

10. Mixed anion effect on the ionic transport behavior, complexation and various physicochemical properties of ionic liquid based polymer gel electrolyte membranes Shalu, Liton Balo, Himani Gupta, **Varun Kumar Singh** and Rajendra Kumar Singh*, **RSC Advances**, (2016) 6, 73028–73039.

11. Role of ionic liquid [$BMIMPF_6$] in modifying the crystallization kinetics behavior of the polymer electrolyte PEO-$LiClO_4$, S. K. Chaurasia,ab Shalu, A. K. Gupta, Y. L. Verma, **V. K. Singh**, A. K. Tripathi, A. L. Saroj and R. K. Singh*, **RSC Advances**, 5, (2015) 8263–8277.

12. Studies on structural, thermal and AC conductivity scaling of PEO-$LiPF_6$ polymer electrolyte with added ionic liquid [$BMIMPF_6$], S. K. Chaurasia, A. L. Saroj, Shalu, **V. K. Singh**, A. K. Tripathi, A. K. Gupta, Y. L. Verma, and R. K. Singh*, **AIP advances**, 5, (2015), 077178.

13. Elastic, Acoustical and Electronic Behaviour of the RM (R = Dy, Ho, Er; M=Cu, Zn) Compounds, R. P. Singh, **V. K. Singh**, R. K. Singh*, M. Rajagopalan, **American Journal of Condensed Matter Physics**, 3(5), (2013), 123-132.

14. Quasi solid-state electrolytes based on ionic liquid (IL) and ordered mesoporous matrix MCM-41 for supercapacitor application, A.K. Tripathi, Y.L. Verma, Shalu, **V.K. Singh,** L. Balo, H. Gupta, S.K. Singh, and R.K.Singh, **Journal of Solid State Electrochemistry**, 21, (2017), 3365-3371.

15. Effect of temperature on electrochemical performance of ionic liquid based polymer electrolyte with Li/$LiFePO_4$ electrodes, Himani Gupta, Shalu, Liton Balo, **Varun Kumar Singh,** Shishir Kumar Singh, Alok Kumar Tripathi, Yogendra Lal Verma and Rajendra Kumar Singh, **Solid State Ionics**, 309, (2017), 192–199.

16. Performance of EMIMFSI ionic liquid based gel polymer electrolyte in rechargeable lithium metal batteries, Balo, Liton, Himani Gupta, Shishir Kumar Singh, **Varun Kumar Singh**, Shalu Kataria, and Rajendra Kumar Singh, **Journal of Industrial and Engineering Chemistry**, 65, (2018), 137-145.

17. Development of Polymer Electrolyte and Cathode Material for Li-Batteries, H. Gupta, S. K. Singh, **Varun Kumar Singh**, A. K. Tripathi, N. Srivastava, R. K. Tiwari, R. Mishra, D. Meghnani, and R. K. Singh, **Journal of The Electrochemical Society**, 166 (2019) A5187-A5192.

18. Development of gel polymer electrolyte based on LiTFSI and EMIMFSI for application in rechargeable lithium metal battery with GO-LFP and NCA cathodes, L Balo, H Gupta, S. K. Singh, **Varun Kumar Singh**, A. K. Tripathi, N Srivastava, R. K. Tiwari, R Mishra, D Meghnani & R K. Singh, **Journal of Solid State Electrochemistry**, 2019, 23.8 (2019): 2507-2518..

Conference Paper	1. Ionic Liquid Based Polymer Gel Electrolyte Membranes for Lithium Ion Rechargeable Batteries, Shalu, , Liton Balo, Himani Gupta, **Varun Kumar Singh**, Shishir Kumar Singh, Alok Kumar Tripathi, Yogendra Lal Verma and Rajendra Kumar Singh*, **ECS Transactions**, (2016) 73 (1), 183-189. 2. Electrochemical study of Ionic Liquid based polymer electrolyte with graphene oxide coated $LiFePO_4$ cathode for Li battery, Himani Gupta, Shalu Kataria, Liton Balo, **Varun Kumar Singh**, Shishir Kumar Singh, Alok Kumar Tripathi, Yogendra Lal Verma, Rajendra Kumar Singh, **Solid State Ionics**, 320, (2018), 186–192.
BookChapters	1. Development of IL based Sodium ion conducting polymer electrolyte membranes for application in sodium rechargeable battery, **Varun Kumar Singh**, Y.L.Verma, Shalu, A.K.Tripathi, Liton Balo, Himani Gupta and R.K. Singh, Energy storage and conversion materials and devices, Editors-Ashok Kumar, Shyamal Kumar Das, Narosa Publishing House Pvt. Ltd., Chaper-16, ISBN-978-81-8497-578-2. 2. Studies on structural, thermal and vibrational behavior of ionic liquid confined in ordered mesoporous matrix, , A.K.Tripathi , Y.L.Verma, Shalu, **Varun Kumar Singh**, Liton Balo, Himani Gupta and R.K. Singh, Energy storage and conversion materials and devices, Editors-Ashok Kumar, Shyamal Kumar Das, Narosa Publishing House Pvt. Ltd., Chaper-14, ISBN-978-81-8497-578-2.
Skills and expertise	Thermal Properties (by DSC & TGA), Dielectric impedance spectroscopy (Novocontrol & Weynker Impedance Analyzeer), Polymer electrolytes, Fourier transform infrared spectroscopy (FTIR), Glove Box (M Braun & Bionic), Cyclic Voltametry (Metraohm CV), Vaccum mixer, Battery Analyzer (MIT and Arbin), Electrochemical devices (Na & Li-rechargeable batteries, supercapacitor etc.), Na & Li-based electrode (Cathode & anode) materials.
Experience	1. Assitant Professor of Physics of Dr. Ghanshyam Singh P G College, Soyepur Lalpur, Varanasi Affiliated to MGKVP University Varanasi. (Aug. 1, 2019 to July 30, 2021.)
PLEDGE:	I, Varun Kumar Singh declare that all the information provided above is true to best of my knowledge.

Place: Delhi

Date: 28-04-2022

(Dr. Varun Kumar Singh)

DSKPDF

Department of Physics and Astrophysics,

University of Delhi, Delhi-110007