Curriculum Vitae

Dr. Markandey Singh

Director, S.R. P.G. College, Gajpur, Banspar, Gorakhpur
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Mobile no.:+ 918004039100
markandey3@bdc.ac.in

OBJECTIVE:

Seeking an opportunity for professional challenge and growth to support and enhance co-operative objectives of the educational organization.

Education: B.Sc., B. Ed., M.Sc., M.Phil., Ph.D. (Physics)

Thesis title "*Experimental Studies on Nanocomposite Polymer Electrolytes and their Applications"*

Supervisor: Prof. S. L. Agrawal, Department of Physics, APS, University, Rewa, M.P.
Research Experience/ Teaching Experience: 15Years

Senior Research Fellowship (SRF) under DAE, BRNS, Mumbai, Project, at NCEMP, University of Allahabad, Allahabad (from Jan.2010-2012)
entitled "Synthesis and Characterization of Polymer Based Nanocomposite Polymer Electrolyte for PEM Fuel Cell Application".

International Visit:

Participation on 12Th Asian Conference in Solid State Ionics, Wuhan University of Technology, Wuhan China [June 02-06, 2010]

Guiding Ph.D. (Supervisor): 4 Students Registered.

Publications in Brief:

Publication in International Journals/Publication in National Journals/ Proceeding	**:35**
National/International Conference/Workshop/ Webinar attained	**:40**
API	**:300**
Publication in SCI. Expanded Journal (Science Citation Index Expanded (SCIE))	**:12**
Google Scholar Citation Index	**:302**

Educational Qualification:

- **(**2007-2011) Ph.D. (PHYSICS),
- Thesis title: "**Experimental Studies on Nanocomposite Polymer Electrolytes and Their Applications**" Department of Physics, A.P.S. University, Rewa (M.P.) India.
- 2007-2008) **M. Phil. (Physics/Material Sciences),** Title of Dissertation: "**Studies on Sol-Gel Derived Polymer Electrolytes**" APS. University Rewa (M.P.) India, Pass with grade **(72.5%) (A-) (=71- 80),**
- (2006-2007) B. Ed, Pass with Fist Division **(75.7%),** I.I.M.T. College Aligarh, Dr. B. R. A. University, Agra, India.
- (1997-1999) M.Sc. Physics (Electronic Specialization) Pass with First Division **(64.5%)** D.D.U University, Gorakhpur, India.
- (1994-1997) B.Sc. Physics, Chemistry, Mathematics, Pass with Second Division **(58.7%)** M.M.M.P.G College Bhatpar Rani, Deoria, D.D.U University Gorakhpur, India.

PERSONAL PROFILES:

Date and Place of Birth	**:16 March, 1977**
Nationality	**: Indian**
Passport No.	**:H-8599065 (30/11/2009 to 29/11/2019)**
PAN No.	**: DIGPS3263A**
Gender	**: Male**
Father's Name	**: Dr. Ram Subhag Singh**
Mother's Name	**: Smt. Ram Sawari Singh**
Permanent address	**: Village-Narahawa, Post- Farendaha, District- Kushi Nagar, (U.P) 274401, India.**
Local Address	**: D106, Sector-5, GIDA, Gorakhpur, 273209, India**
Marital Status	**: Married**

Experiences: 14Years

1. **Working as Associate Prof. in Dept. of Applied Science and Humanities (Physics) at Buddha Group of Institution, GIDA, Gorakhpur, since Dec. 2020 to July 2024.**
2. **Worked as Assistant Prof. in Dept. of Applied Sciences (Physics) at ITM, GIDA, Gorakhpur, since August 2013 to Dec 2020.**
3. **Worked as Senior Research Fellow (SRF) at NCEMP University of Allahabad, Allahabad, Since 2010 to 2012.**
4. **Worked as Guest faculty, Dept. of Physics, CMP Degree college, Allahabad, U.P.2009 to 2010**

Administrative Experiences:

1. **ACS in AKTU, Semester Exam 2024, Odd Sem, BIT, GIDA, Gorakhpur**
2. **Head of Department (Faculty of Science) from 30 Sept. 2021 to 31 January 2024.**
3. **Head of department Applied Science and Humanities 2020-21, BIT, GIDA, Gorakhpur**
4. **Member of Proctorial Board (Proctor) 2016-2020, ITM, GIDA, Gorakhpur**
5. **Member of Grievance Redressal Committee (GRC)2016-17, ITM, GIDA, Gorakhpur**
6. **Departmental Sessional Exam Coordinator, ITM, GIDA, Gorakhpur**
7. **ACS in AKTU Semester Exam 2020, ITM, GIDA, Gorakhpur**
8. **AKTU Semester Exam Coordinator, June 2019, ITM, GIDA, Gorakhpur**

9. **Assistant Centre Superintendent AKTU Semester Exam Dec. 2019-20, ITM, GIDA, Gorakhpur**
10. **Assistant Centre Superintendent CTET Exam 2018, 2019, ITM, GIDA, Gorakhpur**

Coordinator Experiences:

1. **Coordinator Sciences Model Competition 2015 & 2016 under SciTech. Program (Science and technology Exhibition Program), ITM, GIDA, Gorakhpur**
2. **Coordinator Catering committee Zonal Sport Meet AKTU, Lucknow, 2015 & 2016**
3. **B.Tech. first year internal Exam Coordinator, ITM, GIDA, Gorakhpur**
4. **Admission coordinator, ITM, GIDA, Gorakhpur**
5. **Coordinator of Science Model Competition in 2015, ITM, GIDA, Gorakhpur**
6. **Coordinator of Science Model Competition in 2016, ITM, GIDA, Gorakhpur**
7. **Coordinator of Essay Writing Competition in 2018, ITM, GIDA, Gorakhpur**
8. **Assistant Centre Superintendent CTET Exam 2018, ITM, GIDA, Gorakhpur**
9. **Departmental Sessional Exam Coordinator, ITM, GIDA, Gorakhpur**
10. **AKTU Semester Exam Coordinator, ITM, GIDA, Gorakhpur**
11. **Assistant Centre Superintendent (AKTU, Semester Exam June-2019), ITM, GIDA, Gorakhpur**
12. **Assistant Centre Superintendent (AKTU, Semester Exam Dec.-2019), ITM, GIDA, Gorakhpur**

Current Research Interest:

My work is related to the area of polymer electrolytes and Synthesis of Nano Materials (Oxides, ferrites, multiferroic) by sol-gel technique.

1. Development of **Nanocomposite Polymer Electrolytes**.
2. Applications in Solid State Rechargeable **Batteries, Fuel cells** etc.
3. Production of **Green Hydrogen** Through Water Electrolysis.

Award/Fellowship:

1. **Young Scientist Award (Best Paper)-2012 by M.P. Council of Science and Technology.**
2. **Financial Support in Asian conference on Solid State Ionics-2012 by ACSSI-12 Society.**
3. **Financial Support in Asian conference on Solid State Ionics-2010 by DST, New Delhi.**
4. **Senior Research Fellowship (SRF) under DAE, BRNS, Mumbai, Project, at NCEMP, University of Allahabad, Allahabad (from Jun.2010-2012) entitled "*Synthesis and Characterization of Polymer Based Nanocomposite Polymer Electrolyte for PEM Fuel Cell Application*".**
    - **Participated Scout Guide camp at B.Ed. level.**
    - **Participated in National Service Scheme (NSS) at Under Graduate Level.**
    - **AKTU 8 Day FDP (UHVPE), at KIPM-CET, Gorakhpur Ref. No. 180642031**

Membership:

1. **Life time membership of Indian Solid State Ionics Society (ISSIS).**
2. **Life time membership of Society of Physics and Functional materials**

Computer skills:

Origin, Windows, Corel Draw, M.S. Office

Experimental Skills:

The following characterization techniques were used for the characterization of polymer nanocomposite electrolytes e.g.

- X-Ray Diffraction (XRD)
- Scanning Electron Microscopy (SEM)
- Optical Microscopy (OM)
- Fourier Transform Infrared Spectroscopy (FTIR)
- UV-Visible spectroscopy
- Differential Scanning Calorimetric (DSC)
- Impedance Spectroscopy
- Wagner's Polarization
- Dielectric Spectroscopy
- Modulus Spectroscopy

Device Fabrication Skills:

- Solid State Batteries fabrication
- Hydrogen fuel cells fabrication (Proton Exchange Membrane) (PEM) fuel cell

List of Publications:

Book /Book Chapters:

Book: A Text Book of PRACTICAL PHYSICS, B.Sc. III Semester, Dr. Rajesh Verma, Dr. J. P. Pandey, Dr. Nitesh Shukla, Dr. Markandey Singh, as per CBCS Curriculum NEP-2020, DISCOUNT GROUP OF PUBLICATION, 2022, ISBN 978-93-93509-11-6

Book Chapter: NANOCOMPOSITE POLYMER ELECTROLYTES: AN INTRODUCTION, **Markandey Singh**, "*Advances in Chemical and Applied Sciences-Vol-2"*, Published and Printed by First print Publications, Allahabad, Edited by M. Tripathi, et al. ISBN: 978-93-88018-17-3

Book Chapter: STRUCTURAL AND ION TRANSPORT STUDIES IN (100-X) PVDF+ XNH$_4$SCN GEL ELECTROLYTE, S.L. Agrawal **Markandey Singh,** Nidhi Asthana, Mrigank Mauli Dwivedi and Kamlesh Pandey, Electroactive *Polymers, Materials and Devices*, Edt. S.A. Hashmi, A. Chandra et.al.
(2010) Vol-4,129-139.
ISBN:978-81-8424-960-6 (2015)
Electroactive Polymers: Materials and Devices
edited by S.A. Hashmi, Amita Chandra, R.K. Singh, Amreesh Chandra, Suresh Chandra.

Book Chapter: DEVELOPMENT OF FERRITE BASED POLYMER ELECTROLYTE SOLID STATE RECHARGEABLE BATTERY, Markandey Singh, Nidhi Asthana, Kamlesh Pandey and S. L. Agrawal, Proceedings of13th Asian Conference on Solid State Ionics, Edit. B V R Chowdari, *National University of Singapore, Singapore,* J Kawamura J Mizusaki, K Amezawa, *Tohoku University, Japan* ***(17-20 July 2012)79-88*** ISBN 978-981-4415-03-3 (CD)

Solid State Ionics, pp. 79-88 (2012)
https://doi.org/10.1142/9789814415040_0010
ISBN: 978-981-4415-05-7 (ebook)
ISBN: 978-981-4439-90-9 (hardcover) Solid State Ionics

Book Chapter: **STUDY OF ION TRANSPORT BEHAVIOUR IN (PVA-NH_4I): SiO_2 NANO COMPOSITE POLYMER ELECTROLYTE,** Mridula Tripathi, Shivangi Trivedi, N. D. Pandey, **Markandey Singh**, Kamlesh Pandey ***(17-20 July 2012)418-422***.ISBN 978-981-4415-03-3 (CD)

https://doi.org/10.1142/8539 | September 2012
Pages: 760
ISBN: 978-981-4415-05-7 (ebook)
ISBN: 978-981-4439-90-9 (hardcover) Solid State Ionics
Ionics for Sustainable World
Proceedings of the 13th Asian Conference, Sendai, Japan
Edited By: B V R Chowdari (*NUS, Singapore*), J Kawamura (*Tohoku University, Japan*), J Mizusaki (*Tohoku University, Japan*) and K Amezawa (*Tohoku University, Japan*)

Book Chapter: **STUDY OF STRUCTURAL AND DIELECTRIC BEHAVIOUR ON CARBON NANO TUBE (CNT) DISPERSED {X PVA: (1-X) CH_3COONH_4} ELECTROLYTE,**
S.L.Agrawal, **Markandey Singh,** Shuchi Pandey, Mrigank Mauli Dwivedi and Kamlesh Pandey, Proceedings of the 13th Asian Conference on Solid State Ionics, Edit.B V R Chowdari, *National University of Singapore, Singapore*,J Kawamura J Mizusaki, K. Amezawa, *Tohoku University, Japan (**17-20 July 2012)366-372.***ISBN 978-981-4415-03-3 (CD)
Solid State Ionics, pp. 366-374 (2012)
https://doi.org/10.1142/9789814415040_0043

Book Chapter: **PERFOMANCE OF FERRITE FILLERS ON ELECTRICAL BEHAVIOUR OF POLYMER NANO COMPOSITE ELECTROLYTE,** S.L. Agrawal, **Markandey Singh**, KamlehPandey and M. M. Dwivedi, Proceeding of 12thAsian Conference on Solid State Ionics Edits. B.V.R. Chowdari, Hanxing Liu, Wen Chain, Qing Xu, Zhiyong Yu, Wuhan, China, **(2010), 922-930**. ISBN:7562931593, 9787562931591

Book Chapter: **OPTICAL AND ION TRANSPORT STUDY IN [PVA: LIAC]: $LI_2FE_5O_8$ ELECTROLYTE SYSTEM,** Kamlesh Pandey, Mrigank Mauli Dwivedi, N. Asthana, S.L. Agrawal And **Markandey Singh,** Proceeding of 12thAsian Conference on Solid State Ionics Edits. B.V.R. Chowdari, Hanxing Liu, Wen Chain, Qing Xu, Zhiyong Yu, Wuhan, China, **(2010)141-149,** ISBN: 7562931593, 9787562931591

Book Chapter: **EFFECT OF NANO SIZED AL_2O_3 FILLER ON ELECTRICAL BEHAVIOR OF PVA BASED NANO COMPOSITE ELECTROLYTE,** Navin Chand, S.L.Agrawal, **Markandey Singh** and Neelesh Rai, *Proceeding12Th Asian Conference on Solid State Ionics Eds*. B.V.R. Chowdari, Hanxing, Liu, Wen Chain, Qing Xu, Zhiyong Yu, Wuhan,China, (**2010)**.ISBN:7562931593, 9787562931591

Book Chapter: **EFFECT OF FERRITE ON ELECTRICAL PERFORMANCE OF PEO BASED NANOCOMPOSITE ELECTROLYTE,** Kamlesh Pandey, Mrigank Mauli Dwivedi, **Markandey Singh** and S.L. Agrawal, Electroactive *Polymers, Materials and Devices*, Edt. S.A. Hashmi, A. Chandra

et.al. **(2008) Vol-3,184-194**.
Proceedings of 3rd International Conference on Electroactive Polymers: Materials and Devices (ICEP-2008) held at Gold Palace, Jaipur on October 12 - 17, 2008.
ISBN-13 : 978-0230638907, Publisher : Macmillan Publishers India (1 January 2009)
ASIN : B00726TBXC

List of Publications:

2024

1. Synthesis and characterization techniques of Nanocomposite polymer electrolytes membranes: an overview, Markandey Singh, Ubaid Ahmad Khan, Anshuman Srivastava, Nidhi Asthana**,** CNS & E Journal Volume 1 (4), July 2024

2.**Spin Dynamics Investigation and Structural Analysis of Ambient Scalable Sr2+ Doped Zirconium Ferrite Nanoparticles Synthesized by Low Temperature Auto Combustion Route** Ajay Singh Dadwal, Sunil Sambyal, Ravender Tickoo, Ankur Goswami, Shailendra Kumar, Markandey Singh Physica B: Condensed Matter Volume 691, 15 October 2024, 416357
Impact Factor: 2.988

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2022

Structural and Electrical Conduction Studies of Zirconia-Graphite Composites,
International Journal of Creative Research Thoughts (IJCRT) ISSN: 2320-2882,
Ajit Kumar Pandey, Markandey Singh, Abhishek Upadhyay, Pradeep Kumar**, Impact Factor :7.97**

2020

Book Chapter: NANOCOMPOSITE POLYMER ELECTROLYTES: AN INTRODUCTION, **Markandey Singh**, "*Advances in Chemical and Applied Sciences-Vol-2"*, Published and Printed by Firstprint Publications, Allahabad, Edited by M. Tripathi, et al. ISBN: 978-93-88018-17-3

2018

1. STRUCTURAL, ION TRANSPORT AND DIELECTRIC STUDIES ON [PEO: TiO_2]: NH_4SCN BASED NANOCOMPOSITE POLYMER ELECTROLYTES
Markandey Singh, Chandra Prakash Singh, S.L.Agrawal "*Vindhaya Bharti Patrika*" , No.16, July 2018, ISSN 0976-9968,

2017

1.IONIC CONDUCTIVITY OF Zn- FERRITE DOPEDNANOCOMPOSITE POLYMER ELECTROLYTE ANDPROTON (H+) CONDUCTING SOLID STATE RECHARGEABLE BATTERY PERFORMANCE, Markandey Singh, Kamlesh Pandey and S.L. Agrawal,
IJEDR, *International Journal of Engineering Development and Research* (www.ijedr.org) |
Volume 5, Issue 2 (2017) ISSN: 2321-9939, PP.1305-1320.
8754- UGC Web of Science, Scopus) **Impact Factor: 7.35**

2.**STRUCTURAL, IONIC TRANSPORT AND DIELECTRIC STUDIES OF POLYVINYL FORMAL (PVF) BASED NCPES DISPERSED WITH MULTIFERROIC (BFO) FILLER,**
Markandey Singh[1], Kamlesh Pandey[2] and SL Agrawal[3] (EJAET-17206) European Journal of Advances in Engineering and Technology, 2017, 4(10): 723-732, **Impact Factor :4.126**

2015

1. STRUCTURAL AND ION TRANSPORT STUDIES IN (100-X) PVDF+ XNH$_4$SCN GEL ELECTROLYTE, S.L. Agrawal **Markandey Singh,** Nidhi Asthana, Mrigank Mauli Dwivedi and Kamlesh Pandey, Electroactive *Polymers, Materials and Devices*, Edt. S.A. Hashmi, A. Chandra et.al. **(2010) Vol-4,129-139**. ISBN:978-81-8424-960-6 (2015)
Electroactive Polymers: Materials and Devices
edited by S.A. Hashmi, Amita Chandra, R.K. Singh, Amreesh Chandra, Suresh Chandra

2.**EXPERIMENTAL STUDIES ON BLEND BASED POLYMER NANOCOMPOSITE ELECTROLYTES: PVA: PMMA: NH$_4$SCN: BFO SYSTEM**, Markandey Singh, Nilesh Rai, M.Abas, S.L. Agarwal, ISSN 2348–0319, International Journal of Innovative and Applied Research (2015), Volume 3, Issue (9): 23-38

2014

1.STUDY OF STRUCTURAL AND DIELECTRIC BEHAVIOR ON CARBON NANO TUBE (CNT) DISPERSED [$_X$PVF:(1-X)CH$_3$COONH$_4$] ELECTROLYTE, KamleshPandey, Mrigank Mauli Dwivedi, **Markandey Singh,**Nidhi Asthana, and S.L.Agrawal, Russian Journal of Electrochemistry February **2014**, Volume 50, issue 2, pp 190-195,
DOI: *10.1134/S1023193513060116*; *Print ISSN*: *1023-1935*; **Impact Factor: 0.860**
23691 Russian Journal of Electrochemistry Maik Nauka/ Interperiodica /Springer 10231935 16083342

2012

1. DEVELOPMENT OF FERRITE BASED POLYMER ELECTROLYTE SOLID STATE RECHARGEABLE BATTERY, Markandey Singh, Nidhi Asthana, Kamlesh Pandey and S. L. Agrawal, Proceedings of13th Asian Conference on Solid State Ionics, Edit. B V R Chowdari, *National University of Singapore, Singapore*, J Kawamura J Mizusaki, K Amezawa, *Tohoku University, Japan* ***(17-20 July 2012)79-88***. ISBN 978-981-4415-03-3 (CD)
Solid State Ionics, pp. 79-88 (2012) https://doi.org/10.1142/9789814415040_0010
ISBN: 978-981-4415-05-7 (eBook) ISBN: 978-981-4439-90-9 (hardcover) Solid State Ionics

2. STUDY OF ION TRANSPORT BEHAVIOUR IN (PVA-NH$_4$I): SiO$_2$ NANO COMPOSITE POLYMER ELECTROLYTE, MridulaTripathi, Shivangi Trivedi, N. D. Pandey, **Markandey Singh**, Kamlesh Pandey, ***(17-20 July 2012)418-422***.ISBN 978-981-4415-03-3 (CD)
https://doi.org/10.1142/8539 | September 2012
Pages: 760, **ISBN: 978-981-4415-05-7 (eBook) ISBN: 978-981-4439-90-9 (hardcover)**Solid State Ionics **Ionics for Sustainable World** Proceedings of the 13th Asian Conference, Sendai, Japan
Edited By: B V R Chowdari (*NUS, Singapore*), J Kawamura (*Tohoku University, Japan*), J Mizusaki (*Tohoku University, Japan*) and K Amezawa (*Tohoku University, Japan*)

3.STRUCTURAL AND ION TRANSPORT STUDY IN [PEO (NH$_4$)$_2$(C$_4$H$_8$(COO)$_2$)]:LIFE$_5$O$_8$ ELECTROLYTE SYSTEM,KamleshPandey, MrigankMauliDwivedi, NidhiAsthana, **Markandey Singh,** And S.L.Agrawal*, 4ThInternational Conference In Solid State Ionics, BHU,Varansi, ICEP-4 (2012)**.**

4. STUDY OF STRUCTURAL AND DIELECTRIC BEHAVIOUR ON CARBON NANO TUBE (CNT) DISPERSED {X PVA: (1-X) CH_3COONH_4} ELECTROLYTE,
S.L.Agrawal, **Markandey Singh,** Shuchi Pandey, Mrigank Mauli Dwivedi and Kamlesh Pandey, Proceedings of the 13th Asian Conference on Solid State Ionics, Edit.B V R Chowdari, *National University of Singapore, Singapore,*J Kawamura J Mizusaki, K.Amezawa, *Tohoku University, Japan (**17-20 July 2012)366-372**.*ISBN 978-981-4415-03-3 (CD) **Solid State Ionics, pp. 366-374 (2012)**
https://doi.org/10.1142/9789814415040_0043

5.[POLYVINYL ALCOHOL: 1-ETHYL, 3-METHYL IMADAZOLIUM TOSYLATE (IL)] बहुलकवैद्युतअपघट्य की संरचनात्मक तथा प्रत्यावर्तीधारा चालकत्व का अध्ययन, मारकण्डेय सिह, निधि अस्थाना, शुचिपाण्डेय, कमलेशपाण्डेय, मृगांकमौलि द्विवेदी एवं शंकरलालअग्रवाल ***Bhartiya Vaigyanik Evam Audhyogik Anusandhan Patrika,*** ISSN: 0971-7706. E-ISSN: 0975-2412.**Vol-20(2) (2012) 177-182.**

2011

1.DIELECTRIC AND ION TRANSPORT STUDIES IN [PVA: $LIC_2H_3O_2$]: $LI_2FE_5O_8$ POLYMER NANOCOMPOSITE ELECTROLYTE SYSTEM, S. L. Agrawal;**Markandey Singh**;NidhiAsthana; M. M. Dwivedi; KamleshPandey, ***International J.Polymeric Materials and polymeric Biomaterials, Volume*60, issue 4, (2011) 276 –289,DOI:**10.1080/00914037.2010.504178,2013 (©.*ISSN*, 0091-4037.23368 **Impact Factor: 2.784**

2.PERFORMANCE OF FERRITE FILLERS ON ELECTRICAL BEHAVIOUR OF POLYMER NANOCOMPOSITE ELECTROLYTE, KamleshPandey, MrigankMauliDwivedi, Markandey Singh **and S.L.Agrawal, *PhaseTransitions:* A Multinational Journal, Volume 84, issue 4, 03 March 2011, pp343-356.DOI:10.1080/01411594.2010.540851, © 2015 Thomson Reuters, 2014 Journal Citation Reports ®*ISSN*, 0141-1594** **Impact Factor: 0.858**

3.STRUCTURAL AND ION TRANSPORT STUDIES IN (100-X) PVDF+XNH_4SCN GEL ELECTROLYTE,KamleshPandey, MrigankMauliDwivedi, NidhiAsthana, **Markandey Singh** and S.L.Agrawal, ***J.Materials Sci. & Applications, Volume*2, issue 7, July 2011,pp 721-728, DOI:** 10.4236/msa.2011.27100.**ISSN Print:** 2153-117X,**ISSN Online:** 2153-1188.**1,601** Downloads **4,831**Views **Impact factor :0.87**

4.STRUCTURAL AND THERMAL STUDIES OF [PVA: LIAC]:TIO_2 POLYMER NANO COMPOSITE SYSTEM, MridulaTripathi, ShivangiTrivedi, RavindraDhar, Markandey Singh, N.D.Pandey and S.L. Agrawal, *Phase Transitions:* A Multinational Journal, Volume 84, issue 11-12, 25 May, 2011, pp972-980, DOI:10.1080/01411594.2011.573456© 2015 Thomson Reuters, 2014 Journal Citation Reports, , **Impact Factor :0.858**

5.INVESTIGATION ON ION CONDUCTING BEHAVIOR IN ZN- FERRITE BASED POLYMER NANOCOMPOSITE ELECTROLYTE,
S.L. Agrawal, **Markandey Singh**, Mrigank Mauli Dwivedi and KamleshPandey,
***J. Fibers and Polymer*, Vol. 12, issue 7, Oct. 2011, pp 864-874.**DOI:10.1007/s12221-011-0864-zPrint ISSN1229-9197, Online ISSN1875-0052, **Impact Factor: 1.022**

6. DEVELOPMENT OF MAGNISIO FERRITE DOPED POLYMER ELECTROLYTE SYSTEM FOR BATTERY APPLICATION;KamleshPandey,**Markandey Singh**, NidhiAsthana, MrigankMauliDwivedi and S.L. Agrawal, ***International J. of Material Sciences***, **Vol-1, 1(2011) 9-17.** *ISSN* 0973-4589 **Impact Factor: 2.545,**

7.[(100-x) PEO-xNH$_4$SCN]:Znचुम्बकीय पदार्थनैनोसममिश्रितबहुलकवद्युतअपघट्य की संरचनात्मकतथा ए;सीचालकताका अध्ययन्। KamleshPandey, Mrigank Mauli Dwivedi, Ravi Shrivatava, Nidhi Asthana, **Markandey Singh** and S.L. Agrawal, ***Bhartiya Vaigyanik Evam Audhyogik Anusandhan Patrika, (*BVAAP**)* ISSN: 0971-7706. E-ISSN: 0975-2412.**Vol-19, June (2011) 66-69**.

2010

1.ION TRANSPORT STUDIES ON AL-ZN FERRITE DISPERSED NANOCOPOSITE POLYMER ELECTROLYTE, Kamlesh Pandey, M.M.Dwivedi, I.M.L.Das, **Markandey Singh**, S. L. Agrawal, ***Journal of Eletroceramics***, **25 (2010) 99-107**, ,ISSN: 1385-3449' **Impact Factor: 1.422**
7265 Journal of Electro ceramics Springer 13853449 15738663

2. STUDIES OF DIELECTRIC RELAXATION AND A.C. CONDUCTIVITY IN [(100- X) PEO-XNH$_4$SCN]: AL-ZN FERRITE NANOCOMPOSITE POLYMER ELECTROLYTE, KamleshPandey, M.M.Dwivedi,**Markandey Singh,** S. L. Agrawal, ***Journal of Polymer Research***, **17 (2010) 127-133**., ISSN: 1022-9760. **Impact factor 1.969**
19297 Journal of Polymer Research Springer 10229760 15728935

3. PERFOMANCE OF FERRITE FILLERS ON ELECTRICAL BEHAVIOUR OF POLYMER NANO COMPOSITE ELECTROLYTE, S.L. Agrawal, **Markandey Singh**, KamlehPandey And M. M. Dwivedi, Proceeding of 12thAsian Conference On Solid State Ionics Edits. B.V.R. Chowdari, Hanxing Liu, Wen Chain, Qing Xu, Zhiyong Yu, Wuhan, China, **(2010), 922-930**. ISBN:7562931593, 9787562931591

4.OPTICAL AND ION TRANSPORT STUDY IN [PVA: LIAC]: LI$_2$FE$_5$O$_8$ ELECTROLYTE SYSTEM,KamleshPandey, MrigankMauliDwivedi, N. Asthana, S.L. Agrawal And **Markandey Singh,** Proceeding of 12thAsian Conference On Solid State Ionics Edits. B.V.R. Chowdari, Hanxing Liu, Wen Chain, Qing Xu, Zhiyong Yu, Wuhan, China, **(2010)141-149,** ISBN: 7562931593, 9787562931591

5. EFFECT OF NANO SIZED AL$_2$O$_3$ FILLER ON ELECTRICAL BEHAVIOR OF PVA BASED NANO COMPOSITE ELECTROLYTE,Navin Chand, S.L.Agrawal,**Markandey Singh** and NeeleshRai, *Proceeding12Th Asian Conference on Solid State Ionics Eds*. B.V.R. Chowdari, Hanxing, Liu, Wen Chain, Qing Xu, Zhiyong Yu, Wuhan,China, (**2010)**.ISBN:7562931593, 9787562931591

6.EFFECT OF DIFFERENT FILLERS ON STRUCTURAL AND DIELECTRIC BEHAVIOUR OF PLASTICIZED PVDF GEL ELECTROLYTE, S.L.Agrawal *, M. M. Dwivedi, Nidhi, Asthana, Markandey Singh and Kamlesh Pandey, Electroactive Polymers: Materials and Devices.

7.[(100-x) PEO-xNH$_4$SCN]: Al-Znफेराइटनैनोसममिश्रितबहुलकविद्युतअपघट्य की पैरावैद्युतशिथिलतातथा ए,सीचालकताका अध्ययन्। S.L.Agrawal, **MarkandeySingh,** M.M.Dwivedi, M.Tripathi, KamleshPandey,

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Ph.D. Research Work:

Recently, Nanocomposite Polymer Electrolytes (**NCPEs**) have received prominence materials in the field of Solid-State Ionics, owing to their potential applications in advanced electrochemical devices. The present work is focus to develop proton conducting nanocomposite polymer electrolytes (NCPEs) by increasing surface area through dispersal of nanometric sized oxide/ferrite filler particles in polyethylene oxide (PEO) host matrix, followed by their various characterizations and check the electrochemical stability of NCPEs and to development of solid-state rechargeable battery to demonstrate application of electrolytes in Electrochemical Devices.

Future Research Plan:

The future research work is mainly focuses on energy needs of our country. Electrochemical power source ionic devices are better achievement in human society. Recently, large numbers of workers are working on pollution free /eco-friendly electrochemical power sources ionic devices. Our country India is a big country and there is a big population so our energy need is big problem. Keeping this is in mind, to development of ion conducting nanocomposite polymer electrolytes (NCPEs) for the application of

various electrochemical devices such as fuel cell, batteries, super capacitors, sensors etc. Last but not the leastto check applicability of as synthesized NCPEs.

References:

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Declaration: I herewith state that the above said items are true to the best of my knowledge.

(*Dr. Markandey Singh*)