Personal Information

Name	Dr. Anji Reddy Polu
Years of Experience	Teaching: 11 Years Research: 6 Years 5 months
Email Id	anjireddy.p@bvrithyderabad.edu.in
Areas of Specialization	Nanocomposite Materials for Energy Devices (Rechargeable Batteries, Solar Cells, Fuel Cells, Supercapacitors)

Educational Qualifications

Doctoral	Ph.D.	Rechargeable Batteries (Dr. H S Gour Central University, 2013)
PG Degree	M.Sc.	Condensed Matter Physics & Laser Technology (2006)
UG Degree	B.Sc.	Mathematics, Physics, Chemistry (2004)

- **Post-Doctoral Researcher:** **1st June, 2014 – 30th April, 2016**

  Polymer Materials Lab, Department of Chemical and Biomolecular Engineering, Sogang University, Seoul, South Korea.

Awards and Honors

- Featured among the **World's TOP 2% SCIENTISTS LIST** published by Stanford University, USA, and Elsevier in October 2022 & 2023.
- Certificate of Appreciation for acted as Session Chair in International Conference on Environment and Energy Materials (INCEEM-2023), held at Amity University Rajasthan, Jaipur, India during 6th-9th December 2023 in virtual mode.
- Certificate of Appreciation for acted as Session Chair in International Conference on Advanced Material in Innovative Technology (AMITY-2022) held at Amity University Rajasthan, Jaipur, India during 5th – 7th April, 2022 in virtual mode.
- Certificate of Appreciation for acted as Session Chair in "International Conference on Science and Engineering of Materials (ICSEM - 2021)", 19-22 July 2021, Sharda University, Greater Noida, India.
- Best Researcher Award-2021 presented by VD GOOD
- **Best Speaker Award** in International Webinar organized by AKS University, July 2020.

- Recipient of the prestigious "**2017, 2018 & 2019 Albert Nelson Marquis Lifetime Achievement Award**" from Marquis Who's Who. This is one of the outstanding achievements of Who's Who biographees.
- Post-doctoral fellow by "**National Research Foundation of Korea" (NRF)**, Sogang University, South Korea from June 2014-2016.
- "**Certificate of outstanding contribution in reviewing** – award" from Journal of Physics and Chemistry of Solids (Elsevier), March 2015.
- Biographical profile included in **Who's Who in the World® 2015, 2016 & 2019.**
- **Dr. D.S. Kothari Postdoctoral Fellowship** by the University Grants Commission **(UGC), New Delhi**, India (July 2013, August 2016, **not availed)**
- **Best Poster Award** in 57th International Symposium on Solid State Physics (DAE SSPS-2012) Organized by **IIT Bombay and BARC**, Mumbai Dec. 3-7, 2012
- Grant from **DAAD (Germany), CSIR (India)** and **INSA (India)** for presentation of paper in International conference Polychar-18, World forum on advanced polymeric materials, April 6-10, 2010, University of Siegen, **Germany.**
- Grant from **South Asian Physics Foundation (South Asia)** for presentation of paper in International conference Polychar-19, World forum on advanced polymeric materials, March 20-24, 2011, Tribhuvan University, Kathmandu, **Nepal**.
- **Prestigious UGC-Research Fellowship in Sciences for Meritorious Students (RFSMS), New Delhi** 2010-2012 (JRF).
- **All India 1151th Rank in JEST** – 2008 (74.28%).
- **University 3rd** position in **M.Sc.** (Physics).
- **Ist Rank** in the college at Graduation Level (**IIIrd B.Sc. - 94.4**%) and **Gold Medal.**
- Best Meritorious Student in the College (in **B.Sc.**)

Reviewer for the Journals

More than 15 reputed international Journals including

- Journal of Energy Storage (Elsevier)
- Chemical Engineering Journal (Elsevier)
- Energy Storage (Wiley)
- Journal of Materials Chemistry A (RSC)
- RSC advances (RSC)
- The Journal Physical Chemistry (ACS)
- ACS Applied Polymer Materials (ACS)
- ACS Omega (ACS)
- Journal of Power Sources (Elsevier)

- Materials Science & Engineering B (Elsevier)
- Journal of Industrial & Engineering Chemistry (Elsevier)
- Journal of membrane science (Elsevier)
- Polymer Testing (Elsevier)
- Journal of Physics & Chemistry of Solids (Elsevier)
- Journal of Polymer Research (Springer)
- Ionics (Springer)
- Science of Advanced Materials (ASP) etc.

Text Book Publication (2012)

Title: "Synthesis and characterization of Solid Polymer Electrolytes"

ISBN NR: 978-3-959-19669-0

Publisher: Lambert Academic Publishing Inc., Saarbrucken, Germany.

Author: Dr. Anji Reddy Polu

Patents

S. No.	Title of the Patent	Application No.	Filed date	Published Date	Grant Date	Type & Country
1	Solid Polymer Electrolyte composition and Lithium Secondary Battery including the Same	10-2015-0152483	30/10/2015		11/05/2017	Utility & South Korea
2	Robotic Trash Disposal System for Bedridden Individuals and The Elderly	202341083491 A	07/12/2023	05/01/2024		Utility & India
3	Hybrid Nanocomposite Solid Polymer Electrolyte and Use Thereof	202441027669 A	03/04/2024	12/04/2024		Utility & India

4	Solid Polymer Electrolyte and Sodium Battery Employing the Same	202441029350 A	10/04/2024	19/04/2024		Utility & India
5	Nanocomposite Solid Polymer Electrolyte Compositions and the cells comprising the same	202441038308 A	15/05/2024	24/05/2024		Utility & India
6	Solid Polymer Electrolyte for Solid-State Zinc-ion Battery	202441039796 A	22/05/2024	31/05/2024		Utility & India
7	Hybrid Nanocomposite Solid Polymer Electrolyte for Solid-State Sodium-Ion Battery	202441056771	26/07/2024	2/08/2024		Utility & India

Life Member in Electrochemical Society of India (Membership No.: LM-252)

Keynote and Invited Talks

1. **"Ionic Liquid Doped PEO-Based Polymer Electrolytes for Lithium-Ion Polymer Batteries"**
   International Conference on Innovative Electrochemical Energy Materials and Technologies (**EEMT-2015**),
   November 8-11, 2015, Guangxi University, Nanning, **China**. (**Keynote**)
2. "**Organic-inorganic hybrid nanocomposite solid Polymer Electrolytes for Li-ion Batteries**"

National Symposium on Electrochemical Science and Technology (**NSEST-2016**) July 15-16, 2016, **IISc Bangalore**, Bangalore, India (**Invited**)

3. **"Role of POSS Nanocomposite Electrolytes in Energy Storage & Conversion Devices"** International Conference on "Sustainable Energy Technologies for Smart and Clean cities (**SETS&CC-2016**)" July 27-29, 2016, Tirupathi, India (**Invited**).
4. **"Role of Organic-Inorganic Hybrid (POSS) Nanocomposite Polymer Electrolytes in Li-Ion and Li-Air Batteries"** "2nd International Conference on Science and Engineering of Materials (ICSEM - 2018)", 6-8 January 2018, Sharda University, Greater Noida, India. (**Invited**).
5. "**Novel Organic-Inorganic Hybrid (POSS) Nanocomposite Polymer Electrolytes and their Application in Rechargeable Li-Ion Batteries**" International Webinar on New Research Trends in Functional Physics, 1-4, July 2020, AKS University, India. (**Expert Talk**).
6. **"Advances in the high performance and Safer Nanocomposite Polymer Electrolytes for Rechargeable Li based Batteries"** National Conference on Functional Materials, 25-26 July, 2020. Sharda University, India. (**Invited**)
7. "**Novel Nanocomposite Polymer Electrolytes for Rechargeable Li-Ion Batteries**" International Conference on Futuristic Materials (ICFM-20), 18-20 December 2020, D.D.U. Gorakhpur University, Uttar Pradesh, INDIA. (**Invited**)
8. "**Journey of Organic-Inorganic Hybrid (POSS) Nanocomposite Polymer Electrolytes in Batteries from Li-Ion to Li-Air Via Li-S Batteries**" "International Conference on Science and Engineering of Materials (ICSEM - 2021)", 19- 22 July 2021, Sharda University, Greater Noida, India. (**Invited**).
9. "**Current scenario of energy storage and battery management system (BMS) in electric vehicles**" Two-Week FDP on "Electric Vehicle: Opportunities & Challenges", 16-27 August 2021, Sharda University, Greater Noida, India. (**Invited**)
10. "**Role of Organic-Inorganic Hybrid (POSS)Nanocomposite Polymer Electrolytes in rechargeable Lithium Batteries for Electric Vehicles**" "The World Conference on Nanotechnology Research & Applications" 20-21 Sept. 2021, Organizing Committee members from Various Universities of UK, Australia, Russia & Turkey. (**Invited**)
11. **Guest Lecture** on "**Current scenario of Electric Vehicles: Challenges & Future Opportunities**", given on 8th Dec., 2021 in K R Mangalam University, New Delhi, India.
12. **Expert Lecture** in National Webinar on "**Towards a Smarter Battery Management System for Electric Vehicle Applications**" given on 12th Feb., 2022 in Dr. H S Gour Central University, India.

13. **Expert Lecture** in International Webinar on "**Advanced e-Vehicle Battery Materials and their Manufacturing Methods**" given on 29th March, 2022 in University of Technology and Applied Sciences-Shinas, Oman.
14. **Keynote lecture** in National level online workshop on "**Origin Software**" given on 28th May, 2022 in BVRIT Hyderabad College of Engineering for Women, Hyderabad, Telangana, India.
15. "**How to Write a Quality Scientific Paper for Journals**" Three-day virtual FDP on "Effective Methods and Strategies for Quality Research Paper Writing & Publishing Scientific Journal", 22-24 June 2022, Sree Rama Engineering College, Tirupati, India. (Invited)
16. "**Designing Polymer Electrolytes for Safe and High-Capacity Rechargeable Lithium batteries: Progress and Challenges**" One-week FDP on "FDP on Present & Future of Renewable Energy Sources: From Laboratory to Industry" held in Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore (INDIA), 26-30 Sept., 2022 (**Invited Talk**)
17. "**Design and Development of Non-Flammable Polymer Electrolytes for Safer Solid-State Lithium-Ion Battery**" National Conference On Science And Engineering Of Advanced Materials (NCSEAM-2022) DECEMBER 19th – 20th, 2022, organized by Department of Physics, Anurag University, Hyderabad. (**Invited Talk**)
18. "**Challenges of polymer electrolyte with wide electrochemical window for high- energy solid-state lithium batteries**" at the Fifteenth National Conference on Solid State Ionics (NCSSI-15) (December 2-4, 2023) organized by Banaras Hindu University, Varanasi. (**Invited Talk**)
19. "**Advances and Challenges in POSS-based Nanocomposite Polymer Electrolytes for Li-ion Batteries and Beyond**" at the 2nd International Conference on Environment and Energy Materials (INCEEM-2023, 6th-9th December 2023) organized by Sharda University, Greater Noida, India. (**Invited Talk**)
20. "**Effect of POSS Hybrid Nanomaterials and MXenes on Solid Polymer Electrolytes for Rechargeable Lithium Batteries**" in 2nd International Conference on Recent Trends in Materials Science & Devices 2023, 29-31 Dec., 2023. (**Invited Talk**)
21. "**Design of Safer Rechargeable Batteries for Electric Vehicles**" at Government College Kurwai, Vidisha, Madhya Pradesh on 29th Dec., 2023. (**Guest Lecture**)
22. "**Batteries on Fire and Safer Batteries for Electric Vehicles**" at Institute of Chemical Technology, Mumbai Marathwada Campus on 30th Dec., 2023. (**Guest Lecture**).
23. **Resource Person** in National Level Guest Lecture on "**ROLE OF NANOTECHNOLOGY IN POLYMER ELECTROLYTES FOR RECHARGABLE LI-ION BATTERIES AND BEYOND**" conducted on 28th Feb 2024 Organized by Department of Physics, Koneru

Lakshmaiah Education Foundation (Deemed to be University), Green Fields, Vaddeswaram, Guntur, Andhra Pradesh, India – 522302.

24. "**Can POSS – Hybrid Nanoparticles Improve Ionic Conductivity, Mechanical Stability, and Electrochemical Performance of Polymer Electrolytes in Li-ion Batteries?**" ICEMD – 2024 @ BHU, 19-21 March 2024. (**Invited Talk**)
25. "**Journey of Nanocomposite Polymer Electrolytes from Li-ion Batteries to Na-ion Batteries**" ICSME – 2024 @ ERODE SENGUNTHAR ENGG. COL.,21-22 March 2024. (**Invited Talk**)

International FDP/Workshop Organized as Convener

1. International One-Week Online Faculty Development Program on **"Innovations in High–Performance Materials for Sustainable Energy and Environmental Impacts"** to be held from 29th April to 4th May 2024**,** Organized by BVRIT HYDERABAD College of Engineering for Women, Hyderabad, India.
2. "**International Workshop on Advanced Materials in Innovative Technology**" (AMITY 2021), 14th to 18th Dec., 2021, Organized by BVRIT HYDERABAD College of Engineering for Women collaboration with AMITY University, Jaipur.

List of Publications in Peer Reviewed Journals (70)

(Total No. of Citations=2680, h-index= 28, i10-index = 36)

Review Articles

1. D. Ponnamma, J-J Cabibihan, M. Rajan, S. S. Pethaiah, K. Deshmukh, J P Gogoi, S. K. K. Pasha, M. B. Ahamed, J. Krishnegowda, B.N. Chandrashekar, ***Anji Reddy Polu***, C. Cheng, "Synthesis, Optimization and Applications of ZnO/polymer nanocomposites" '**Materials Science and Engineering: C**' **98, 1210-1240, 2019**. (**I.F. – 7.328**)
2. J Theerthagiri, R. A Senthil, B Senthil Kumar, ***Anji Reddy Polu***, Muthupandian Ashok kumar, Madhavan Jagannathan, "Recent advances in MoS_2 nanostructured materials for energy and environmental applications - A Review" '**Journal of Solid State Chemistry**' 252, 43-71, **2017**. (**I.F. – 3.498**)
3. Rahul Singh, ***Anji Reddy Polu***, Hee-Woo Rhee, Canan Verlikli, Pramod K Singh, **"**Perspective of Solid Biopolymer Electrolytes in Dye Sensitized Solar Cell and Battery Application" '**Renewable and Sustainable Energy Reviews**' 65, 1098-1117, **2016** (**I.F. – 16.8**)
4. K. Surana, R. M. Mehra, B. Bhattacharya, H-W Rhee, ***Anji Reddy Polu***, P. K. Singh, "A comprehensive study of chalcogenide Quantum Dot Sensitized Solar Cells with a new solar cell

exceeding 1V output" '**Renewable and Sustainable Energy Reviews**' 52, 1083-1092, **2015** (**I.F. – 16.8**)

Papers Published in International Journals

2025

1. ***Anji Reddy Polu***, Shufeng Song, Aseel A. Kareem, Serguei V. Savilov, Pramod K. Singh, Mekala Venkanna, Chava Sunil Kumar, Performance enhancement of PEO: LiDFOB based nanocomposite solid polymer electrolytes via incorporation of POSS-PEG13.3 hybrid nanoparticles for solid-state Li-ion batteries, ***Journal of Physics and Chemistry of Solids***, 196, 112319 (2025) (**I.F. – 4.3**)

2024

2. Reem Y. Mahmood, Aseel A. Kareem, ***Anji Reddy Polu***, Enhancement of ionic conductivity and electrochemical stability of PVA/HPMC/PANI/$CuSO_4$ gel polymer for rechargeable batteries electrolytes, ***Solid State Ionics***, Volume 408, May 2024, 116511.
3. Aseel A. Kareem, Hussein Kh. Rasheed, Lamiaa kh. Abbas, ***Anji Reddy Polu***, Basheer A. Alshammari, Hani K. Ismail & Sun Theo Constan Lotebulo Ndruru, An experimental study to investigate the effect of aluminum nanorod-reinforced epoxy matrix nanocomposites, ***Polymer Bulletin***, Volume 81, pages 8979–8991, (2024).
4. Shufeng Song, Zongyuan Chen, Shengxian Wang, Fengkun Wei, Serguei V Savilov, ***Anji Reddy Polu***, Pramod K Singh, Zhaoqin Liu, Ning Hu, Dilutedly localized high-concentration ionogel electrolyte enabling high-voltage quasi-solid-state lithium metal batteries, ***Appl. Phys. Lett***. 125, 013902 (2024).
5. Mohammed K. Jawad,Farah T. M. Noori,Nadia A. Ali,Seenaa I. Hussein,Aseel A. Kareem & ***Anji Reddy Polu***, Preparation and characterization of PVA/MWCNT nanocomposites: a composition dependence study of structural, optical and mechanical properties, ***Fullerenes, Nanotubes and Carbon Nanostructures***, 1–9 (2024). https://doi.org/10.1080/1536383X.2024.2387146.
6. Ibrahim Zakariya'u, Suneyana Rawat, Shubham Kathuria, Thejakhrielie Ngulezhu, Shufeng Song, M. Z. A. Yahya, Serguei V. Savilov, ***Anji Reddy Polu***, Ram Chandra Singh & Pramod K. Singh, Efficient, stable dye-sensitized solar cell using ionic liquid–solid polymer electrolyte**.** ***J Mater Sci: Mater Electron*** **35**, 1563 (2024).
7. Suneyana Rawat, Pramod K. Singh, Amrita Jain, Shufeng Song, M. Z. A. Yahya, Serguei V. Savilov, Markus Diantoro, Monika Michalska, ***Anji Reddy Polu*** & Ram Chandra Singh, Ionic liquid (1-butyl-1-methylpyrrolidinium trifluoromethanesulfonate) doped

polyethylene polymer electrolyte for energy devices. J Mater Sci: Mater Electron 35, 1643 (2024)

8. Reem Y Mahmood, Aseel A Kareem, ***Anji Reddy Polu***, Synthesis and Characterization of Polyaniline/[BMIM][BF_4] Polyionic Liquid by Interfacial Polymerization, ***Iraqi Journal of Science***, 2024, Vol. 65, No. 8, pp: 4325-4335

2023

8. ***Anji Reddy Polu***, A.R., Kareem, A.A., Kim, K. et al. Conductivity enhancement in K^+-ion conducting solid polymer electrolyte [PEG : KNO_3] and its application as an electrochemical cell. **Korean J. Chem. Eng**. 40, 2975–2981 (2023). (**I.F. – 2.8**)
9. Kareem, A.A., Rasheed, H.K., ***Anji Reddy Polu***. et al. Effect of phosphoric acid chemical etching on morphological, structural, electrical, and optical properties of porous GaAs Schottky diodes. **J Mater Sci: Mater Electron** 34, 1456 (2023). (**I.F. – 2.7**)
10. Aseel A. Kareem, ***Anji Reddy Polu***, Hussein Kh. Rasheed, Thamer Alomayri, "Effect of silver nanoparticles on structural, thermal, electrical, and mechanical properties of poly(vinyl alcohol) polymer nanocomposites" (**I.F. – 3.5**)
    Polymer Composites (Online First, April, 2023), **https://doi.org/10.1002/pc.27319**
11. Thotakura Ramesh, Basireddy Sravanthi, Kollu Ashok, A. Bhaskar, ***Anji Reddy Polu***, "Magnetodielectric Comparison Study Between Microwave and Conventional Sintered NiCuZn Ferrites"
    Macromolecular Symposia 407 (1), 2200021, **2023**
12. Surasi Kiran, Konagolla Saibaba, Thotakura Ramesh, Kollu Ashok, Anji Reddy Polu, "Preparation and Characterization of ZnO – ZnFe2O4 Nanocomposites"
    Macromolecular Symposia 407 (1), 2200021, **2023**
13. Thotakura Ramesh, M. Chandra Shekhar Reddy, Basireddy Sravanthi, Anjireddy polu, P. Nageswar Rao "Structural, Magnetic, and Dielectric Properties of Y2GdFe5O12 Synthesized by Hydrothermal Method"
    Macromolecular Symposia 407 (1), 2200105, **2023**
14. ***Anji Reddy Polu***, Aseel A. Kareem & Hussein Kh. Rasheed "Thermal, electrical and electrochemical properties of ionic liquid-doped poly(ethylene oxide)–LiTDI polymer electrolytes for Li-ion batteries"
    Journal of Solid State Electrochemistry 27, 409-416, 2023. (**I.F. = 2.75**)
15. Aseel A. Kareem, Hussein Kh. Rasheed and ***Anji Reddy Polu*** "Effect of phosphoric acid on the thermal, mechanical and electrical properties of polyimide / polyaniline"
    Journal of Reinforced Plastics and Composites 42, 700-706, 2023. (**I.F. = 3.4**)

2022

16. ***Anji Reddy Polu***, Pramod K Singh, P Siva kumar, Girish M Joshi, T Ramesh, IM Noor, Aysh Y Madkhli and Sunanda Kakroo, "Development of solid polymer electrolytes based on poly (ethylene oxide) complexed with 2-trifluoromethyl-4, 5-dicyanoimidazole lithium salt and 1-ethyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide ionic liquid for Li-ion batteries"
High Performance Polymers, **(Online First, July 2022)** (**I.F. = 1.73**)
https://doi.org/10.1177/09540083221113035
17. T. Ramesh, B. Sravanthi, Kiran Kumar Ganta, K. Praveena, J. Naga Vishnu Vardhan, ***Anji Reddy Polu*** "Structural, magnetoelectric properties of multidoped Ni–Al ferrites for microwave circulator applications"
Applied Physics A (**2022**) 128:957 (**I.F. = 2.983**)
18. Noor M. Ali, Aseel A. Kareem and ***Anji Reddy Polu***, "Effect of Glycerin on Electrical and Thermal properties of PVA/Copper Sulphate Gel polymer electrolytes"
Journal of Inorganic and Organometallic Polymers and Materials, **July 2022**, (**In Press**). https://**doi**.org/10.1007/s10904-022-02417-7 (**I.F. = 3.6**)
19. Sujeet K Chaurasia, Atul K. Sharma, Pramod K. Singh, Li Lu, Jiangfeng Ni, Serguei V Savilov, Alexey Kuznetsov, ***Anji Reddy Polu,*** Abhijeet Singh, and Manoj K. Singh**, "**Structural, thermal, and electrochemical studies of biodegradable gel polymer electrolyte for electric double layer capacitor**"**
High Performance Polymers, 34, 673-682**, 2022.** (**I.F. = 1.73**)
20. ***Anji Reddy Polu***, M. Venkanna & T. Ramesh, "Synthesis and characterization of new solid polymer electrolyte (PEG + CH_3COONa) for solid-state sodium batteries"
Journal of Optoelectronic and Biomedical Materials, 14, 63-67, 2022. **ESCI**
21. ***Anji Reddy Polu*** & P K Singh, "Improved ion dissociation and amorphous region of PEO based solid polymer electrolyte by incorporating tetracyanoethylene",
Materials Today: Proceedings, 49, 3093-3097, 2022, Elsevier Publisher.
22. ***Anji Reddy Polu*** & P K Singh, "Effect of POSS-PEG on ionic conductivity and relaxation of solid polymer electrolytes",
Materials Today: Proceedings, 49, 3076-3080, 2022, Elsevier Publisher.

2019

23. ***Anji Reddy Polu,*** "A Novel Nanocomposite Polymer Electrolyte for Application in Solid State Lithium Ion Battery"
Proceedings of the IEEE Conference on Nanotechnology, 2019, 2018-July, 8626268.

2017

24. ***Anji Reddy Polu***, H W Rhee, M. Jeevan Kumar Reddy, A. M. Shanmugharaj, Sung Hun Ryu and Dong Kyu Kim

"Effect of POSS-PEG hybrid nanoparticles on cycling performance of polyether-LiDFOB based solid polymer electrolytes for all solid-state Li-ion battery applications"

'Journal of Industrial & Engineering Chemistry' 45, 68-77, **2017.** (**I.F. = 6.064**)

25. ***Anji Reddy Polu*** and H W Rhee

"Ionic Liquid Doped PEO-Based Solid Polymer Electrolytes for Lithium-Ion Polymer Batteries"

'International Journal of Hydrogen Energy' 42, 7212-7219, **2017** (**I.F. = 7.139**)

26. ***Anji Reddy Polu*** and H W Rhee

"Effect of POSS-PEG(n=4) Hybrid Nanoparticles on Electrical, Thermal and Mechanical properties of PEO based Solid Polymer Electrolytes"

'**Advances in Polymer Technology**' 36, 145-151, **2017** (**I.F. = 2.663**)

27. *K Deshmukh, M B Ahamad,* ***Anji Reddy Polu****, K K Sadasivuni, S K K Pasha, D Ponnamma, M A A Almaadeed, R R Deshmukh, K Chidambaram*

"Solution Processed White Graphene Reinforced Ferroelectric Polymer Nanocomposites with Improved Thermal Conductivity and Dielectric Properties for Electronic Encapsulation"

'**Journal of Polymer Research**' 24, 27, **2017**. (**I.F. = 3.061**)

28. *K Deshmukh, M B Ahamad, R R Deshmukh, S K K Pasha, K K Sadasivuni,* ***Anji Reddy Polu****, D Ponnamma, M A A Almaadeed, K Chidambaram*

"Newly developed biodegradable polymer nanocomposites of cellulose acetate and Al_2O_3 nanoparticles with enhanced dielectric performance for embedded passive applications"

'**J. Mater. Sci.: Materials in Electronics'** 28, 973-986, **2017**. (**I.F. = 2.8**)

29. *K Deshmukh, M B Ahamad, R R Deshmukh, K K Sadasivuni, D Ponnamma, S K K Pasha, M A A Almaadeed,* ***Anji Reddy Polu****, K Chidambaram* "Eeonomer 200F_: A High-Performance Nanofiller for Polymer Reinforcement—Investigation of the Structure, Morphology and Dielectric Properties of Polyvinyl Alcohol/Eeonomer-200F_ Nanocomposites for Embedded Capacitor Applications"

'**Journal of Electronic Materials**' 46, 2406-2418, **2017**. (**I.F. = 2.047**)

30. ***Anji Reddy Polu***, "Ionic transport studies in CeO2 doped PEG: NaNO3 polymer electrolyte and its application in solid state batteries"

The International journal of analytical and experimental modal analysis, 9, 1-5, 2017.

2016

31. ***Anji Reddy Polu*** and H W Rhee

"Effect of TiO_2 nanoparticles on structural, thermal, mechanical and ionic conductivity studies of PEO_{12}-LiTDI solid polymer electrolyte"

'Journal of Industrial & Engineering Chemistry' 37, 347-353, **2016.** (**I.F. = 6.064**)

32. ***Anji Reddy Polu*** and H W Rhee

"The Effects of LiTDI Salt and POSS-PEG(n=4) Nanoparticles on Ionic Conductivity and Crystallinity of PEO-based Solid Polymer Electrolytes"

'**Science of Advanced Materials**' 8, 931-940, **2016**. (**I.F. = 1.671**)

33. *K Deshmukh, M B Ahamad, R R Deshmukh, S K K Pasha, K K Sadasivuni,* ***Anji Reddy Polu****, D Ponnamma, M A A Almaadeed, K Chidambaram*

"Fumed SiO_2 Nanoparticles Reinforced Biopolymer Blend Nanocomposites with High Dielectric Constant and Low Dielectric Loss for Flexible Organic Electronics"

'**J. Applied Polymer Science'** 134, 44427, **2016**. (**I.F. = 1.901**)

34. *K Karuppasamy, Hee-Woo Rhee, P Anil Reddy, Dipti Gupta, Liviu Mitu,* ***Anji Reddy Polu*** *and X S Shajan* (**DOI**: 10.1016/j.jiec.2016.06.020)

"Ionic liquid incorporated nanocomposite polymer electrolytes for rechargeable lithium ion battery: A way to achieve improved electrochemical and interfacial properties"

'Journal of Industrial & Engineering Chemistry' 40, 168-176, **2016.** (**I.F. = 4.841**)

35. *K Deshmukh, M B Ahamad,* ***Anji Reddy Polu****, K K Sadasivuni, S K K Pasha, D Ponnamma, M A A Almaadeed, R R Deshmukh, K Chidambaram*

"Impedance Spectroscopy, Ionic Conductivity and Dielectric Studies of New Li^+ ion Conducting Polymer Blend Electrolyte Based on Biodegradable Polymers for Solid State Battery Applications"

'**J. Mater. Sci.: Materials in Electronics'** 27, 11410-11424, **2016**. (**I.F. = 2.324**)

36. *X. Tang, M. Ravi, S Song,Z. Zhang,* ***Anji Reddy Polu***

"A study of structural, electrical and electrochemical properties of PVdF-HFP gel polymer electrolyte films for magnesium ion battery applications"

'**Journal of Industrial & Engineering Chemistry**' 37, 67-74, **2016**. (**I.F. = 4.841**)

37. *A. Kadian, S. Arora, A. Sharma, G. M. Joshi, M. Pandey,* ***Anji Reddy Polu****, M. J. Joshi, P. Thomas*

"Improved dielectric constant of thermoplastic blend as a function of alumina loading"

'**Measurement**' 90, 461-467, **2016**. **(I.F. = 2.791)**

2015

38. ***Anji Reddy Polu****,* H W Rhee and Dong Kyu Kim

"New Solid Polymer Electrolytes (PEO_{20}-LiTDI-SN) for Lithium Batteries: Structural, Thermal and Ionic Conductivity Studies"

'**J. Mater. Sci.: Materials in Electronics'** 26, 8548–8554, **2015**. (**I.F. = 2.324**)

39. ***Anji Reddy Polu*** and H W Rhee

"Nanocomposite Solid Polymer Electrolytes Based on Poly(ethylene oxide)/POSS-PEG(n=13.3) Hybrid Nanoparticles for Lithium Ion Batteries"

'**Journal of Industrial & Engineering Chemistry**' 31, 323-329, **2015**. (**I.F. = 6.064**)

40. ***Anji Reddy Polu,*** Dong Kyu Kim and H W Rhee

"Poly(ethylene oxide)-Lithium difluoro(oxalato) borate New Solid Polymer Electrolytes: Ion-Polymer Interaction, Structural, Thermal and Ionic Conductivity Studies"

'**Ionics**' 21, 2771-2780, **2015.** (**I.F. = 2.394**)

41. ***Anji Reddy Polu***, Ranveer Kumar and H W Rhee

"Magnesium ion conducting solid polymer blend electrolyte based on biodegradable polymers and application in solid-state batteries"

'**Ionics**', 21, 125-132, **2015**. (**I.F. = 2.394**)

42. *Mayank Pandey, Girish M. Joshi,* ***Anji reddy Polu***

"Electrical performance of soft polymer ionic membranes with mono and multi polymer systems" (**Elsevier**)

'**Karbala International Journal of Modern Science**' 1, 194-199, **2015**.

2014

43. ***Anji Reddy Polu,*** Ranveer Kumar and H W Rhee

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'**Chinese Journal of Polymer Science**' 31, 641-648, **2013**. (**I.F. = 2.804**)

50. ***Anji Reddy Polu*** and Ranveer Kumar

"Effect of Al_2O_3 ceramic filler on PEG-based composite polymer electrolytes for magnesium batteries"

'**Advanced Materials Letters**' 4, 543-547, **2013**. (**I.F. = 1.46**)

51. S*unita Sundari, K. Vijaya Kumar*, N. Krishna Jyothi and* ***Anji Reddy Polu*** "Structural and A.C. Conductivity Studies of (PVdF + $NaClO_4$) Solid Polymer Electrolyte System for an Electrochemical Cell Applications",

'**Asian Journal of Chemistry**' 25, S459-S463, **2013**. (**I.F. = 0.45**)

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52. ***Anji Reddy Polu*****,** Ranveer Kumar and K Vijaya Kumar

"Ionic Conductivity and Electrochemical Cell Studies of New Mg^{2+} ion Conducting PVA/PEG based Polymer blend Electrolytes"

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54. ***Anji Reddy Polu,*** Ranveer Kumar and Harsha Dehariya

"Impedance Spectroscopy studies of PVA/PEG based polymer blend electrolytes"

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"AC impedance and dielectric spectroscopic studies of Mg^{2+} ion conducting PVA-PEG blended polymer electrolytes"

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56. ***Anji Redy Polu*** and Ranveer Kumar

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'**E-Journal of Chemistry**' **8,** 347-353, **2011**. (**I.F. = 1.727**)

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'**Journal of the Korean Physical Society**' **59**, 114-118, **2011**. (**I.F. = 0.63**)

Papers published in International Conference Proceedings

1. Satyanarayana Reddy S. S. and ***Anji Reddy Polu***

"A Novel Nanocomposite Polymer Electrolyte for Application in Solid State Lithium Ion Battery" **DOI:** 10.1109/NANO.2018.8626268

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2. Girish M. Joshi, Kalim Deshmukh, Mayank Pandey, ***Anji Reddy Polu***, Pankaj Tambe, M. Basheer Ahamed, VP senthil
   "Modern Trends in Nanodielectrics"
   '**Int. J. ChemTech Res.**', 6, 1824-1826, **2014.** (**I.F. = 0.34**)
3. ***Anji Reddy Polu*** *and* Ranveer Kumar
   "Effect of TiO_2 Ceramic Filler on PEG-Based Composite Polymer Electrolytes for Magnesium Batteries",
   '**American Institute of Physics Proceedings***',* 1512, 996-997, **2013**. (**I.F. = 0.22**)
4. ***Anji Reddy Polu*****,** *Ranveer Kumar and Harsha Dehariya,*
   "AC Conductivity and Electrochemical Studies of PVA/PEG Based Polymer Blend Electrolyte Films"
   '**American Institute of Physics Proceedings***'* 1447, 969-970, **2012.** (**I.F. = 0.22**)
5. *Harsha Dehariya, Ranveer Kumar and* ***Anji Reddy Polu***
   "Effect of Mixed Glass former on Ionic Conductivity of Silver Boro Tungstate glass system $x[0.75AgI: 0.25AgCl]: (1-x) [Ag_2O-\{B_2O_3:WO_3\}]$"
   '**Journal of Physics: Conference Series**' 365, 012034, **2012**. (**IOP**) (**I.F. = 0.45**)
6. *Ranveer Kumar, Harsha Dehariya and* ***Anji Reddy Polu****,*
   "Frequency And Temperature Dependence Of Conductivity Studies Of New Silver-Calcia-Borate Glass System",
   '**American Institute of Physics Proceedings***'* **1349**, 523-524, **2011**. (**I.F. = 0.22**)
7. ***Anji Reddy Polu*** ***and*** *Ranveer Kumar,*
   *"*Charge Transport and Discharge Mechanism in $[PVA+PVP+Mg(NO_3)_2]$ Polymer Electrolyte Films"
   '**Electrochemical Society (ECS)**' MA2011-02, 369, **2011.**
8. ***Anji Reddy Polu*** ***and*** *Ranveer Kumar,*
   *"*Impedance Spectroscopy studies of PEG-$(CH_3COO)_2Mg$-TiO_2 Polymer Electrolytes"
   '**PROCEEDINGS OF NCAMT-2009**' 426-432, **2009.**

Papers presented in conferences

International

1. **Anji Reddy Polu**, Ranveer Kumar, "Electrical and optical properties of pure and $(CH_3COO)_2Mg$ – doped PEG polymer electrolytes", 'International Conference on Electroceramics', Delhi University, India, Dec. 13-17, 2009.
2. **Anji Reddy Polu**, Ranveer Kumar, Harsha Dehariya, "Temperature dependence of conductivity studies of mechano-chemically synthesized Lithium –Borate glass system", 'International conference on materials for millennium (MATCON-2010)', Cochin university of science and technology, Kerala, India, Jan. 11-13, 2010.

3. **Anji Reddy Polu**, Ranveer Kumar, "Conductivity and Dielectric Studies on New Mg^{2+} ion Conducting Blends of PVA/PVP Based Polymer Electrolytes", 'International Polymer Conference POLYCHAR 18', University Of Siegen, Siegen, **Germany**, April 7-10, 2010.
4. **Anji Reddy Polu**, Ranveer Kumar**, "**Effect of Al_2O_3 Nano particles on Conductivity and Dielectric studies of PEO Based Solid polymer electrolytes", 'International Conference on Nanoscience and Nanotechnology', SRTMU, Nanded, India, Jan.11-13, 2011.
5. **Anji Reddy Polu**, Ranveer Kumar, "Study of Mg^{2+} Ion Conduction in PVA-$Mg(NO_3)_2$ Solid Polymer Electrolytes", 'World Forum on Advanced Materials POLYCHAR 19', Tribhuvan University, Kathmandu, Nepal, March 20-24, 2011.
6. **Anji Reddy Polu**, Ranveer Kumar and Harsha Dehariya **"**AC Conductivity and Electrochemical Studies of PVA/PEG Based Polymer Blend Electrolyte Films", '56th DAE-SSP Symposium, SRM University, Chennai, Dec. 19-23, 2011.
7. **Anji Reddy Polu**, Ranveer Kumar and Harsha Dehariya, "Effect of nanoscale Al_2O_3 on PEG-based nanocomposite polymer electrolytes for Mg-ion batteries", 'FNE-2012', Sharda University, Noida, India, Jan. 9-11, 2012.
8. **Anji Reddy Polu**, Ranveer Kumar and Harsha Dehariya, "Effect of Al_2O_3 Ceramic Filler on PEG-based Composite Polymer Electrolytes for Magnesium Batteries", 'ICRAM-2012', VIT, Vellore, India, Feb. 20-22, 2012.
9. **Anji Reddy Polu** and Ranveer Kumar **"**Effect of TiO_2 Ceramic Filler on PEG-Based Composite Polymer Electrolytes for Magnesium Batteries" '57th DAE-SSP Symposium, IIT Bombay, Mumbai, Dec. 3-7, 2012.
10. **Anji Reddy Polu "**Ionic conductivity and battery discharge studies of magnesium ion conducting PEG based composite polymer electrolytes" 'IETC-2013, VIT University, Vellore, TN, India, Dec. 5-7, 2013.
11. **Anji Reddy Polu,** Ranveer Kumar and Girish M Joshi, **"**Effect of Ceramic Fillers on PEG-based Solid Polymer Electrolytes for Solid-State Magnesium Batteries" 'ICSEM-2014, Sharda University, Greater Noida, India, Jan. 6-8, 2014.
12. **Anji Reddy Polu** and Hee-Woo Rhee "Structural, Thermal and Ionic conductivity studies of PEO: LiDFOB Solid Polymer Electrolytes" 'Korean Polymer Society Conference-2014, ICC, Jeju Island, South Korea, Sept.8-10, 2014.
13. **Anji Reddy Polu** and Hee-Woo Rhee "Enhanced Ionic conductivity, Mechanical and electrochemical properties of PEO based solid polymer electrolytes by incorporating POSS-PEG(n=4) hybrid nanoparticles" 'IUPAC-2015 (45th World Chemistry Congress)', Bexco, Busan, South Korea, August 9-14, 2015.
14. **Anji Reddy Polu**, "International webinar on Interdisciplinary & Innovative Research", **12th Sept., 2020, Sharda University, India.**
15. **Anji Reddy Polu**, International Webinar on Optical Materials for 21st Century, **21st Sept., 2020, UTM, Malaysia.**

16. **Anji Reddy Polu**, International Webinar on Potential Anti-Viral and Anti-Bacterial Nanomaterials Applications including Covid Pandemic, **28th Sept., 2020, UTM, Malaysia.**
17. **Anji Reddy Polu**, Two Days International Webinar On Advanced Materials and Their Applications, 16-17 June 2020, Dr. H S Gour Central University, M.P.
18. **Anji Reddy Polu** "Synthesis of Novel Bulky Nano-Lithium Salt and Their Electrolytes for Safer Solid-State Lithium-Ion Battery" 3rd Indo-Korea Virtual Conference on Development of Advanced Materials for Future Technologies (DAMFT-2022), 22-23 April 2022, Vellore Institute of Technology (VIT), Chennai, Tamil Nadu, India.
19. **Anji Reddy Polu** "Effect of POSS-PEG (n = 13.3) hybrid nanoparticles on Electrical and Electrochemical Properties of PEO-LiDFOB solid polymer electrolytes for Li-ion Batteries" 7th International Conference on Nanoscience and Nanotechnology (ICONN-2023) (Virtual Conference) March 27 - 29, 2023, SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, Tamil Nadu, India.

National

20. **Anji Reddy Polu**, Ranveer Kumar, Vijay Verma, **"**Solid state studies on Phenylbutazone drug", 'National symposium on Advances in Lasers and Spectroscopy – 2009', Dr. H. S. Gour University, Sagar, India, Feb. 27-28, 2009.
21. **Anji Reddy Polu**, Harsha Dehariya "Developments in High power, ultrashort-pulse, Fiber laser systems: A Review", 'National symposium on Advances in Lasers and Spectroscopy – 2009', Dr. H. S. Gour University, Sagar, India, Feb. 27-28, 2009.
22. **Anji Reddy Polu**, Ranveer Kumar, "Study of Ionic Conductivity and Dielectric behaviour in a New Mg^{2+} Ion Conducting Solid Polymer Electrolyte: [PEG: $(CH_3COO)_2Mg$]", 'National Conference on Advances in Nanomaterials , Devices and Technologies', S.V. Degree College, Kadapa, A.P, India, July 11-12, 2009.
23. **Anji Reddy Polu**, Ranveer Kumar, "Impedance spectroscopy studies of PEG-$(CH_3COO)_2Mg$-TiO_2 Polymer Electrolytes". 'National Conference on advanced manufacturing technology', Shri Mata Vaishno Devi University, Jammu & Kashmir, India, Nov. 5-6, 2009.
24. **Anji Reddy Polu**, Ranveer Kumar, "Electrical Conductivity Studies on PVA/PVP-$Mg(NO_3)_2$ Solid Polymer Blend Electrolyte" '8th National Conference on Solid State Ionics', Dr. H. S. Gour University, Sagar, India, Dec. 7-9, 2009.
25. **Anji Reddy Polu**, Ranveer Kumar, "Conductivity and Dielectric studies on Zn^{2+} ion Conducting PEG-$(CH_3COO)_2Zn$ Polymer Electrolytes" '8th National Conference on Solid State Ionics', Dr. H. S. Gour University, Sagar, India, Dec. 7-9, 2009.
26. **Anji Reddy Polu**, Ranveer Kumar, Valerio Causin, Ramesh Neppalli and Harsha Dehariya "Synthesis and Characterization of New Zn^{2+} ion Conducting PEG based Solid Polymer Electrolytes" '9th National Conference on Solid State Ionics', JIIT, Noida, India, Dec. 15-17, 2011.

27. **Anji Reddy Polu**, Ranveer Kumar, K. Vijay Kumar, "Effect of Al_2O_3 Nano Fillers on PEG-based Solid Polymer Electrolytes and their Performance in Magnesium Batteries" 'National Conference on Recents Trends in Nanoscience and Technology for Device Applications', K L University, Guntur, India, April 4-5, 2013.
28. **Anji Reddy Polu**, "Ionic Conductivity, XRD and DSC Studies of new Solid Polymer Electrolyte (PEG+KNO_3) for Solid-State Battery Application" 'National Seminar on Solar Energy Harvesting Through Photovoltaic Cells and Storage', RVR & JC Engineering College, Guntur, India, June 21-22, 2013.
29. **Anji Reddy Polu,** National Webinar on "Nanophotonic Materials and Devices" 18th July 2020, Dr. H S Gour Central University, M.P.
30. **Anji Reddy Polu**, National webinar on **"**Nano Composite Ion-Conducting Solid Polymer Electrolyte Materials**",** 10th June, 2020 Vignan's Institute of Management & Technology for Women, Hyderabad.
31. **Anji Reddy Polu**, National Webinar on "Emerging Fields of Modern Electronics & Role of MATLAB in Physics", 30th June 2020, Dr. H S Gour Central University, M.P.
32. **Anji Reddy Polu**, National Conference on Environment & Energy Materials, **27-28, June, 2020, Sharda University, India.**
33. Attended IEI Technical Webinar on "Development of Lithium Ion Battery / Sodium Ion Batteries for Commercial Applications" organized by 'The Institution of Engineers', India, 23rd June 2022.

Workshops/FDP Attended

34. Workshop on "***Materials Science for energy storage***", Anna University, Chennai, India, Jan. 18-22, 2010.
35. National Workshop on "*X-ray Diffraction Techniques and Applications***"** Saurashtra University, Rajkot, India, March 17-19, 2010.
36. Workshop on "*Physical Techniques for the Investigation of Fast Ion Conducting Materials*" The M. S. University of Baroda, Vadodara, India, March 20-22, 2010.
37. "*One day Short Course on Polymer Characterization*", University of Siegen, Siegen, **Germany**, April 6, 2010.
38. "*One day Short Course on Polymer Characterization*", Tribhuvan University, Kathmandu, **Nepal**, March 20, 2011.
39. "*Workshop on Electronic and Ionic materials and Devices*" Banaras Hindu University, Varanasi, India, March 25-27, 2011.
40. FDP on "NBA-OBE: Attainment of Course Outcomes(COs),Program Outcomes (POs) and Program Specific Outcomes (PSOs)", Sri Venkateswara College of Engineering and Technology (Autonomous), Chittoor, Andhra Pradesh, 4-5, July 2020

41. National Level 3 Days Online FDP on “Recent Trends in Energy Conversion and Storage Devices”, Tirumula Engineering College, Andhra Pradesh, India, 29-06-2021 to 01-07-2021.

42. Attended One Week Online National Level Faculty Development Programme on "Advanced Computational and Experimental Research in Physics-2022" organized by Department of Physics, SRM Institute of Science and Technology, Ramapuram Campus, Chennai from 20th June to 27th June 2022.

43. Attended One Week Online Faculty Development Program on “Synthesis, Characterization and Applications of Novel Materials” organized by the Department of Physics & Chemistry, Ramco Institute of Technology, Rajapalayam during 02.08.2021 - 06.08.2021.