# Dr. SONU KUMAR

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# **BOOKS AUTHORED/EDITED:**

- 1. Dr. Rahul Ratnakar Mahamuni, Dr. V M Gobinath, **Sonu Kumar**, Dr. Binda M B, "Fundamentals of Industrial Instrumentation", AGPH Books Publisher, 2022, ISBN No: 978-93-94339-36-1.
- 2. Mrs. K Geetha, Mr. Ashwini Kumar Saini, Prof. Nirmal Mahesh Dattatray, **Mr. Sonu Kumar**, "Data Science: An Approach to Future", AGPH Books Publisher, 2022, ISBN No: 978-93-94339-44-6.
- 3. Akshitta Nagpal, Sayan Chakraborty, Dr. Priyank Kumar Singh, Lopamudra Ghosh, **Sonu Kumar**, Dr. Sunil L Bangare, "21st Century Innovations in Management, Science and Technology, Education and Social Sciences", InSc International Publishers, 2022, ISBN No.: 978-1-68576-279-7.
- 4. Mr. Vishal Verma, Ms. Reshu Gupta, Dr. Sarika, **Mr. Sonu Kumar**, Dr. Rajesh Deb Barman, Mr. Sayan Chakraborty, "Recent Advances in New Technology, Business Management Education and Social Sciences", InSc International Publishers, 2022 [In Press].
- 5. **Dr. Sonu Kumar**, Ms. Roobaa Malini J, "Insights of Robotics", Fanatixx Publisher, 2022, [In Press]

# **WORKING EXPERIENCE:**

- 1. Working at K L University, Vaddeswaram since 4th April 2022 as a Post Doctoral Fellow in ECE Dept.
- 2. Worked at CSIR-SERC, Chennai from 11th August 2016 to 10th August 2019 as a Senior Research Fellow.
- 3. Worked at CSIR-SERC, Chennai from 11th August 2014 to 10th August 2016 as a Junior Research Fellow.
- 4. Worked at FIITJEE, Delhi from 4<sup>th</sup> February 2014 to 9<sup>th</sup> August 2014 as an Associate Professor of Chemistry.
- 5. Worked at PIE Education, Delhi from 27<sup>th</sup> May 2013 to 2<sup>nd</sup> February 2014 as an Associate Professor of Chemistry.

# **ACADEMIC CREDENTIALS:**

Examination/	University/Board	Year/	Percentage
Degree		Session	/CGPA
PDF	K L University, Vaddeswaram	2022-23	
(ECE)	Andhra Pradesh		
Ph.D	Academy of Scientific and Innovative Research	2016-22	8.75
(Electrical &	(An Institute of National Importance)		
Electronics Eng.)	` '		
M. Tech	Academy of Scientific and Innovative Research	2014-16	8.59
(Renewable Energy)	(An Institute of National Importance)		
B. Tech	National Institute of Technology (NIT) Patna	2009-13	7.80
(Electronics and	(An Institute of National Importance)		
Communication Eng.)			
Class XII	Bihar School Examination Board, Patna	2007-09	79.40%
Class X	Bihar School Examination Board, Patna	2006-07	79.40%

#### **Ph.D Details:**

- Institute Name: CSIR-Structural Engineering Research Centre (SERC), Chennai
- Thesis Title: Design and Development of Smart Controller for Monitoring the Performance of Solar-Wind Hybrid System and Simulation Studies for Size Optimisation
- Subject Specifications: (1) Renewable Energy, (2) Electrical and Electronics Instrumentation, and (3) Energy Engineering

# TRAINING EXPERIENCES:

- Two Months industrial training on Solar Thermal at Aspiration Energy Pvt. Ltd. in Chennai, 2015.
- Two Week training program on Research Orientation at CSIR-HRDC, Ghaziabad, 2014-2015.
- Six Week Summer Training/Project Work at Electronics Research and Radar Development Establishment (LRDE), **DRDO**, Bangalore-93 during May and June 2012.
- Six Week Summer training on Advance Robotics & Embedded system design at Technophilia Pvt. Ltd. in Kolkata during June and July 2011.

# **VOLUNTEERING EXPERIENCES:**

 Worked as National Level Coordinator for Robotics (Yantra) Project in an NGO named Bhumi, from 28 April 2019 to 13 June 2021 and impacted 500+ children. Currently, working as National Level Coordinator for Speak Out Project from 14 June 2021 onwards.

# PATENTS FILED:

# **Co-Inventor in the following Patents:**

- **1.** Image Processing based paddy leaf disease detection using Adaboost classifier, App. No. 202141037949 A, Indian Patent Filed.
- **2.** ML & Big Data Based Cloud Computing Construction Assessment System for Android Applications, App. No. 202141044813A, Indian Patent, Filed.
- **3.** Artificial Intelligence Based Smart Powering Technique using Solar Tracking System, App. No. 202141041223A, Indian Patent Filed.
- **4.** Development of Big Data Analytics for Intelligent Industrial Manufacturing Based on Wireless and IOT Technology, App. No. 202141041225A, Indian Patent Filed.
- **5.** Deep Learning Based Detection of Chronic Heart Disease Using Feature Extraction of ECG, App. No. 202141048049A. Indian Patent Filed and Published.
- **6.** The Mediating Role of Artificial Intelligence on the Association between Work Life Balance and Employee Performance in IT industry, App. No. 202141046109A, Indian Patent Filed.
- **7.** IoT system based on blockchain technology produces a superior level of safety in communication, App. No. 202141058687A, Indian Patent Filed.
- **8.** Optimality and Limit behavior of Machine Learning (ML) Estimator for Multi-Robot Localization Using Artificial Intelligence (AI), App. No. 2022314089A, Indian Patent Filed.
- **9.** Machine Learning Analytics for Specialized Stock Trading, App. No. 202211002430A, Indian Patent Filed.
- **10.** Deep learning based approach by the application of Artificial intelligence induced neural network to analyse the effects of Covid 19, App. No. 202211002430A, Indian Patent Filed.
- **11.** An Efficient management of cloud data using green cloud computing techniques, App. No. 202241038801A, Indian Patent Filed.

#### **DESIGN PATENT / INDUSTRIAL DESIGN REGISTRATION:**

1. Sonu Kumar, "A Solar-Wind Hybrid Controller", Design no. 345908-001, Indian Design Registration, registered on 8 July 2021, Granted on 24 Aug. 2021.

# **Co-Inventor in the following Design Patents:**

1. Smart Renewable Electrical Vehicle, Indian Design Registration, Application filed on 14 Sept 2021,

- App. No. 348989-001
- 2. A Battery Vehicle Charging Station, Indian Design Registration, Application filed on 14 Sept 2021, App. No. 349473-001.
- 3. A Solar Inverter Enclosure, Indian Design Registration, Application filed on 5 Oct 2021, App. No. 350758-001.

# **ACADEMIC PROJECTS:**

- **1.** Design and development of smart controller for monitoring the performance of solar-wind hybrid system and simulation studies for size optimisation at CSIR-CSIO & SERC, Chennai.
- 2. Energy Audit for CSIR-IMMT Bhubaneswar Campus.
- 3. Solar Powered Automated Irrigation system using WSN technology at CSIR-CSIO & SERC, Chennai
- 4. Android Application based monitoring of DC Powered Devices at CSIR-CSIO, Chennai.
- **5.** Adoption of CRM initiatives among the Small and Medium Enterprises An Analysis of factors and its impact on Organizational Characteristics.
- **6.** Optimization of Electrode in Vanadium redox flow battery at CSIR-CECRI & SERC, Chennai.
- 7. Analysis of Solar Thermal market in commercial and manufacturing sector at Aspiration Energy Pvt. Ltd, Chennai.
- **8.** SMART HOUSE: GSM based Home Appliance Control in which we can control our home devices from distant locations by sending messages through GSM Network at NIT Patna.
- **9.** Design and Simulation of Flyback Converter used in Power Supply Unit of Radar System at LRDE, DRDO Bangalore.

# **PAPERS PUBLISHED:**

**1. Sonu Kuma**r and C. Sethuraman, "Estimation of State of Charge of Lead-Acid Battery Used in Solar Photovoltaic System", Bhartiya Vaigyanik Evam Audyogik Anusandhan Patrika (BVAAP), CSIR-National Institute of Science Communication And Information Resources (NISCAIR), New Delhi, India, 27 (1&2), pp. 7-19, June 2019.

http://nopr.niscair.res.in/bitstream/123456789/53500/1/BVAAP%2027%281%262%29%207-19.pdf

**2. Sonu Kumar**, C. Sethuraman and Chandru G, "Design of Optimum Sizing for Hybrid Renewable Energy System using HOMER Pro to Meet the Identical Load Demand at Selected Indian Cities", International Journal of Grid and Distributed Computing (IJGDC), Vol. 14, No. 1, pp. 1589-1607, July 2021. Web of Science/Emerging SCI journal.

http://sersc.org/journals/index.php/IJGDC/article/view/36949/20354

- **3. Sonu Kumar**, C. Sethuraman, Chandru G, "Sizing Optimization and Techno-Economic Analysis of a Hybrid Renewable Energy System Using HOMER Pro", Journal of Scientific and Industrial Research (JSIR), Vol. 80, No. 09, pp. 777-784, September 2021. *SCI indexed journal*. http://nopr.niscair.res.in/bitstream/123456789/58141/1/JSIR%2080%289%29%20777-784.pdf
- **4.** S. Ahamad, D. P Bhutada, **S. Kumar**, M. Subramanian, S. Jaiswal, "Analysing the Role of Psychosocial Stressors and Machine Learning and its Impact on Project Manager Performance", Vidyabharati International Interdisciplinary Research Journal, Special Issue, ISSN 2319-4979, October 2021, pp. 867-873. *Web of Science*

http://www.viirj.org/specialissues/2021/SP2108/Part%2010.pdf

**5.** Srilakshmi C H, Sheik Faritha Begum, M. S. Vinmathi, **Sonu Kumar**, Zatin Gupta and Kannadasan B, "A Real-Time Bio-Manufacturing Observation System Featuring an IOT Sensor Using Big Data", International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS), November 2021, Special Issue, 10(11), pp. 527-539. *Web of Science* 

https://doi.org/10.31032/IJBPAS/2021/10.11.1046

**6.** Kannadasan B, Dheeraj Rane, Sathish Kumar Penchala, Ranjan Walia, **Sonu Kumar** and Selvan P, "Smart Cities and Embedded IOT Sensor Systems to Improve the Performance of the Automated Environment", International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS), November, Special Issue, 2021, 10(11), pp. 632-644. *Web of Science* 

https://doi.org/10.31032/IJBPAS/2021/10.11.1055

- **7.** Abhijit Maidamwar, Loganathan M. K, Dinesh Mavaluru, Kirubakaran, Surindar Gopalrao Wawale and **Sonu Kumar**, "Bio-Applications of Industry 4.0 Machine Learning High-Quality Control and Predictive Environment Maintenance", International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS), November, Special Issue, 2021, 10(11), pp. 964-975. *Web of Science* <a href="https://doi.org/10.31032/IJBPAS/2021/10.11.1083">https://doi.org/10.31032/IJBPAS/2021/10.11.1083</a>
- **8.** Neha Gautam, Poornima H. N, Buvaneswari B, Kumar R. G, Chandra Sekhar Koppireddy and **Sonu Kumar**, "Deep Learning Approach for Denoising Contours and Classification of Automatic Health Tissue Image Wavelets via CNN", International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS), November, Special Issue, 2021, 10(11), pp. 1024-1038. *Web of Science* https://doi.org/10.31032/IJBPAS/2021/10.11.1088
- **9.** Avadhesh Kumar Dixit, S. Karuppusamy, **Sonu Kumar** and Jyothi N. M, "Applications of IOT Principles in Healthcare", International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS), November, Special Issue, 2021, 10(11), pp. 1101-1111. *Web of Science* <a href="https://doi.org/10.31032/IJBPAS/2021/10.11.1095">https://doi.org/10.31032/IJBPAS/2021/10.11.1095</a>
- **10.** Shaik Shafi, Dillip Narayan Sahu, Himani Pandey, Roopa H, **Sonu Kumar** and Kamal Alaskar, "IOT Based Mobile Application Developed for Water and Power Monitoring in Residential Building", Natural Volatiles & Essential Oils, November 2021; 8(5), pp. 6434 6441. *Scopus indexed journal*. https://www.nveo.org/index.php/journal/article/view/1806/1570
- **11. Sonu Kumar** and C. Sethuraman, "Grid Tied Inverters for Renewable Energy Systems—A Review", International Journal of Environment and Sustainable Development (IJESD), Inderscience Publishers, Vol. 21, No. 1/2, pp. 43-75, Jan 2022. *Web of Science/Emerging SCI journal*. https://www.inderscienceonline.com/doi/pdf/10.1504/IJESD.2022.119384

# **PAPERS UNDER REVIEW:**

- **1. Sonu Kumar,** C. Sethuraman and Chandru G, "Design and Development of Controller for Solar-Wind Hybrid System Based on Proteus Simulation", IETE Journal of Research, *SCI indexed journal*, Submitted on 8 July 2021 [*Under Revision*].
- **2. Sonu Kumar,** C. Sethuraman, Chandru G, "Design and Development of Micro Off-grid Inverter for Solar Photovoltaic System using Proteus Simulation", Journal of Scientific and Industrial Research (JSIR), *SCI indexed journal*, Submitted on 12 May 2021 [*Under Review*].
- **3. Sonu Kumar**, C. Sethuraman, Chandru G, "Neural Network Based Power Prediction Model for Solar-Wind Hybrid Renewable Energy Monitoring System", Journal of Scientific and Industrial Research (JSIR), *SCI indexed journal*, Submitted on 10 January 2022 [*Under Review*].
- **4.** Quality-based power system in the intelligent network integrated into IOT-based wireless sensor networks, Cluster Computing: The Journal of Networks, Software Tools and Applications, *SCI indexed journal*, Submitted on 16 Dec 2021 [*Under Review*].
- **5.** Damage Detection Methodology through Machine Learning to Enhance Energy Cultivation in Wind Turbine, International Journal of Photoenergy, *SCI indexed journal*, Submitted 10 Jan 2022, [*Under Review*].

# **CONFERENCE PRESENTATIONS:**

- **1. Sonu Kumar,** N. Bala Krishna and A. K. Sahu, "Optimization of Performance Parameters in Vanadium Redox Flow Batteries" at International Conference on Recent Trends in Engineering and Material Sciences (ICEMS-2016), 17-19 March 2016.
- **2.** Sumon Dey, **Sonu Kumar** and Kota Srinivas, "Current Status and Future Potential of Renewable Energy in India A Review", National Conference on Green Energy Technologies Energy Management Instrumentation, 28-29 April 2017, pp. 32-36.

- **3.** Mukesh Kumar, **Sonu Kumar**, C. Sethuraman and Kota Srinivas, "Measurement and Analysis on Energy Usage in an Institute and suggestion for Energy Conservation", National Conference on Green Energy Technologies Energy Management Instrumentation, 28-29 April 2017, pp. 63-69.
- **4. Sonu Kumar** and C. Sethuraman, "Instrumentation for Solar Photovoltaic System Efficiency Monitoring through Modbus Protocol", Proceedings of the 2nd IEEE International Conference on Electronics, Communication and Aerospace Technology (ICECA 2018), 29-31 March 2018, IEEE Xplore ISBN: 978-1-5386-0965-1, pp. 233-241. https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=8474601
- **5. Sonu Kumar** and C. Sethuraman, "Effect of Solar Irradiance on Solar PV Panel Electrical and Efficiency Parameters" at International Workshop on Energy Materials and Devices (IWEMD-2018), 3-4 May 2018.
- **6. Sonu Kumar** and C. Sethuraman, "Estimation of State of Charge of Lead-Acid Battery Used in Solar Photovoltaic System", National Hindi Technical Seminar: Technology Vision 2035-Challenges & Opportunities, organised by CSIR SERC and CMC, 13-14 August, 2018, NHS-20 [2<sup>nd</sup> Best Paper Award].
- **7. Sonu Kumar** and C. Sethuraman, "A Review on Converters and Control Strategies used in Solar Wind Hybrid System, 5th International Conference on Computing, Communication, Control and Automation (ICCUBEA-2019), IEEE, 19-21 September 2019.
- **8. Sonu Kumar,** R. N. Ramesha, G. C. Shivaraju, C. Sethuraman, M. Thirunavoukkarasu and R. Priya, "Solar Photocatalytic Decolourisation of Dyeing Wastewater using Low Cost Nanomaterial"2nd International Conference on New and Renewable Energy Resources for Sustainable Future", (ICONRER-2019), 7-9 November 2019.
- **9. Sonu Kumar** and C. Sethuraman, "Grid Tied for Renewable Energy System-A Review", 2nd International Conference on New and Renewable Energy Resources for Sustainable Future", (ICONRER-2019), 7-9 November 2019.
- **10. Sonu Kumar**, C. Sethuraman and G. Ramesh Babu, "Design and development of PWM based Charge Controller and Inverter for Solar Photovoltaic System", International Virtual Conference on Emerging Frontiers in Control and Communication Technologies (ICECCT-2020), pp. 71-72, 26 August 2020, ISBN No: 978-93-5416-017-2.
- **11. Sonu Kumar**, C. Sethuraman and G. Ramesh Babu, "Design of Smart Three input DC-DC Boost Converter for Solar-Wind Hybrid System using MATLAB Simulations", International Virtual Conference on Emerging Frontiers in Control and Communication Technologies (ICECCT-2020), pp. 178-179, 26 August 2020, ISBN No: 978-93-5416-017-2.
- **12. Sonu Kumar** and C. Sethuraman, "Modelling of Hybrid Renewable Energy System with Techno Economic Analysis using HOMER Pro to meet the Institutional Energy Demand", 1st International Conference on Recent Innovations in Science, Engineering & Technology-2020 (ICRISET-20200), 11-12 September 2020.
- **13. Sonu Kumar** and C. Sethuraman, "Impact of Covid-19 on Environment, Energy and Automotive Sector and Future Mobility Solutions", International Web Conference on Technologies for Green Mobility 2020 (ICTGM-2020), 25-26 September 2020.
- **14. Sonu Kumar** and C. Sethuraman, "Solar-Wind Hybrid System Electrical Parameters Monitoring through Web Server and Windows Application", International Conference on Innovative Inventions in Engineering and Technology ICIIET-2020, pp. 38, 18 October 2020, ISBN: 9798699678396 [2nd Best Paper Award].
- **15. Sonu Kumar**, Chandru G and C. Sethuraman, "Frequency Regulations using Astable Multi-vibrator for off-grid Low Power Solar Inverter", 3rd International Conference on New and Renewable Energy Resources for Sustainable Future (ICONRER-2021), 11-13 February 2021.
- **16. Sonu Kumar**, Chandru G and C. Sethuraman, "Design of Micro Off-grid Inverter for Solar Photovoltaic System using Proteus Simulation", International Conference on Recent Challenges and Opportunities in Engineering (ICRCOE-2021), 13-14 March 2021.

- **17. Sonu Kumar**, Chandru G and C. Sethuraman, "Design and Development of Hybrid Controller for Solar-Wind Hybrid System using Proteus Simulation", E-National Conference on Advances in Mechanical Engineering (NCAME-2021), 6-7 May 2021.
- **18. Sonu Kumar**, C. Sethuraman and Chandru G, "Design and Development of PWM based Charger for Wind Energy System using Multisim Simulation", E-International Conference on Advances in Renewable Energy and Electric Vehicles (ICAREEV-2021), 13-14 May 2021.
- **19. Sonu Kumar**, C. Sethuraman and Chandru G, "Neural Network Based Power Prediction for Solar-Wind Hybrid System", International Conference on Recent Trends in Science, Humanities & Engineering (RTSHE-2021), 18-19 June 2021.
- **20. Sonu Kumar**, C. Sethuraman and Chandru G, "Optimum Configuration of Hybrid Renewable Energy System using HOMER Pro to Meet the Constant Energy Demand at Different Indian Regions", International Conference on Recent Trends in Science, Humanities & Engineering (RTSHE-2021), 18-19 June 2021.
- **21. Sonu Kumar**, C. Sethuraman, Chandru G and Induja Udayakumar, "Design and Development of Web Based Solar-Wind Hybrid Efficiency Monitoring System", International Conference on Environment, Economy, Management, Science & Technology (ICEEMST- 2021), 24-25 August 2021.
- **22. Sonu Kumar**, C. Sethuraman and Chandru G, "Design of Control Unit for Off-grid and Grid Connected Solar-Wind Hybrid System Suitable for Supplying Power to both AC and DC Loads", 6th International Conference on Recent Trends in Electronics, Information & Communication Technology (IRTEICT-2021), IEEE Xplore ISBN: 978-1-6654-3559-8, 27-28 August 2021. https://ieeexplore.ieee.org/document/9573541
- **23. Sonu Kumar**, C. Sethuraman and Chandru G, "Performance Evaluation of a Small Vertical Axis Wind Turbine (SVAWT) System", International Conference on Advancements in Engineering, Management, Science and Technology (ICEMST- 2021), 10-11 September 2021.
- **24. Sonu Kumar**, Chandru G, Koushika Preethi A, Induja Udayakumar, "Design of Static Var Generators for Power Management A Review", International Conference on Green Economy for sustainable growth in Commerce, Science, Technology, Engineering & Management (ICGCSTEM 2021), 9-10 October 2021, [Best Presentation Award].
- **25. Sonu Kumar**, Koushika Preethi A, Induja Udayakumar and Chandru G, "Integrated Energy Audit and Management for Energy Conservation A Review", International Conference on Agriculture, Science, Engineering & Management (ICASEM 2021), 23-24 October 2021.
- **26. Sonu Kumar**, Induja Udayakumar, Chandru G, Koushika Preethi A and Rana Rinkal, "Design and Simulation of Flyback Converter to be used in a Power Supply Unit", International Conference on Agriculture, Science, Engineering & Management (ICASEM 2021), 23-24 October 2021.
- **27. Sonu Kumar**, Chandru G, Koushika Preethi A, Roobaa Malini J and Ambast Kumar, "Recent Advancements in Robotics", International Conference on Emerging trends on Commerce, Science, Engineering, Management and Technology (ICCSEMT-2021), 13-14 November 2021.
- **28. Sonu Kumar**, Chandru G, Koushika Preethi A, Induja Udayakumar and N Varshini, "UV Based Disinfection Systems", International Conference on Emerging trends on Commerce, Science, Engineering, Management and Technology (ICCSEMT-2021), 13-14 November 2021 [**Best Presentation Award**].
- **29.** Rana Rinkal and **Sonu Kumar**, "Speed Control of PWM Inverter Fed Three Phase Induction Motor", International Conference on Emerging trends on Commerce, Science, Engineering, Management and Technology (ICCSEMT-2021), 13-14 November 2021.
- **30. Sonu Kumar**, Roobaa Malini J, N Varshini, Induja Udayakumar and Koushika Preethi A, "Role of Robots in Fighting Against Coronavirus", International Conference on recent trends on Management, Engineering & Science (ICMES 2021), 27-28 November 2021 [**Best Presentation Award**].
- **31. Sonu Kumar**, N Varshini, Roobaa Malini J, Balaji V R, Induja Udayakumar, Koushika Preethi A, "Drones Involvement to Combat COVID-19", International Conference on Recent Innovative Inventions in Research & Development (4th ICRIRD-2021), 19 December 2021.

- **33. Sonu Kumar**, N Varshini, Balaji V R, Chandru G, Roobaa Malini J, Maheswari J, "Electrical Vehicles in India: Current Status, Challenges and Way Forward", International Conference on Recent Innovative Inventions in Research & Development (4th ICRIRD-2021), 19 December 2021.
- **34. Sonu Kumar**, Shashi Ranjan, Rohini M, "Artificial Intelligence an Important Tool to Fight COVID-19", International Conference on Recent Innovative Inventions in Research & Development (4th ICRIRD-2021), 19 December 2021.
- **35. Sonu Kumar**, Roobaa Malini J, N Varshini, Balaji V R, Induja Udayakumar, "IoT Based Smart Villages and Cities", International Conference on Innovation in Engineering, Management and Science (ICEMS-2022), 29-30 January 2022.
- **36. Sonu Kumar**, Shashi Ranjan, N Varshini, Roobaa Malini J, Balaji V R, "Status of 5G Technology in India", International Conference on Innovation in Engineering, Management and Science (ICEMS-2022), 29-30 January 2022.
- **37. Sonu Kumar**, Shashi Ranjan, Balaji V R, N Varshini, Roobaa Malini J, "Artificial Intelligence Based Smart Hand Sanitizing System", International Conference on Innovation in Engineering, Management and Science (ICEMS-2022), 29-30 January 2022.
- **38. Sonu Kumar**, Shashi Ranjan, Koushika Preethi A, Chandru G and Induja Udayakumar, "Non-Zero Smart Building Technology", International Conference on Advancements in Science, Management & Engineering (ICSME-2022), 26-27 February 2022.
- **39. Sonu Kumar**, Shashi Ranjan, N Varshini, Balaji V R and Roobaa Malini J, "Applications of Blockchain Technology in Fighting Against Coronavirus", International Conference on Innovations in Engineering Sciences (ICIES-2022), Management & Engineering (ICSME-2022), 26-27 March 2022.
- **40. Sonu Kumar**, N Varshini, Balaji V R, Shashi Ranjan and Roobaa Malini J, "Adoption of 6G Technology as Next Generation Mobile Wireless Communication Approach for Bridging the Digital Divide", International Conference on Innovations in Engineering Sciences (ICIES-2022), Management & Engineering (ICSME-2022), 26-27 March 2022.

### **AWARDS:**

- 1. Received Research Excellence Award 2020 from Institute of Scholars (InSc), on 20th February 2021.
- 2. Received Young Researcher Award 2020 from Institute of Scholars (InSc), on 20th February 2021.
- 3. Received Changemaker of the year 2020 Award from an NGO Bhumi, on 2<sup>nd</sup> May 2021.
- 4. Received Best Researcher Award in Engineering 2020 from PEARL Foundation, on 19th June 2021.
- 5. Received Award of Excellence in Research, from Novel Research Academy Pondicherry, on 27<sup>th</sup> August 2021.

#### **REVIEWING EXPERIENCE:**

- 1. International Journal of Sustainable and Green Energy, since 26th February 2020.
- 2. Advances in Science, Technology and Engineering Systems Journal, since 26th March 2020.
- 3. Asia Pacific Journal of Multidisciplinary Research since 1<sup>st</sup> April 2020.
- 4. The International Journal of Climate Change since 28th April 2020.
- 5. 3<sup>rd</sup> IEEE International Conference on Signal Processing and Communication (ICSPC-2021), since 7<sup>th</sup> December 2020.
- 6. InSc International Journal of Basic and Applied Sciences, since 20th February 2021.
- 7. Journal of Scientific and Industrial Research (JSIR), since 22<sup>nd</sup> September 2021.
- 8. International Journal of Computers Communications & Control, since 1st February 2022.

### **INVITED TALK:**

**1.** Delivered a Webinar on Atmanirbhar Bharat: "Career Opportunity", on 23<sup>rd</sup> August 2020, organized by Government Polytechnic Buxar and Government Polytechnic Kaimur, Bihar.

# **CONFERENCE SESSION CHAIR:**

**1.** Session Chair, International Conference on Emerging Techniques in Engineering and Internet of Things (ICETEIoT-2022), organized by International Institute of Research in Multidisciplinary, Chirala, Andhra Pradesh, 13 Feb 2022.

**MEMBERSHIP:** IEI, IAENG, IEEE, ASME, IIRM, InSc

STTP Attended: 4 FDP Attended: 8

Seminars/Webinars/Conferences Attended: 60

# **PERSONAL DETAILS:**

Date of Birth: 30/12/1992

Sex : Male

Marital Status : Unmarried Nationality : Indian

Languages Known: English, Hindi

Correspondence Address: R-202, TDC, CSIR-SERC, CSIR Road, Taramani, Chennai-600113. Permanent Address: Vill-Dhattha, P.O-Dharaha, P.S-Rosera, Dist-Samastipur, Bihar-848210

# **DECLARATION:**

I hereby declare that the above information given by me is true and correct to the best of my knowledge.

DATE:	16/04/2022	SIGNATURE:	Some	human