

Dr. Suhash Ranjan DEY

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Affiliated Faculty:

Greenko School of Sustainability
(E-Waste Resources Engineering
and Management; Sustainable
Engineering)
Climate Change
Heritage Science and Technology

• EDUCATION

- 2002-2006
(3 ½ years) **Ph.D., Materials Science**, Successfully defended on 12th June 2006
Laboratory of Texture and Applications to Materials, Université Paul Verlaine - Metz, Metz, France.
- 2000-2002
(2 years) **Master of Technology, Materials and Metallurgical Engineering**
Department of Materials and Metallurgical Engineering, Indian Institute of Technology, Kanpur, India.
- 1998-2000
(2 years) **Master of Science, Chemistry**
Department of Chemistry, Indian Institute of Technology Kanpur, India.
- 1995-1998
(3 years) **Bachelor of Science, Chemistry (Honors)**
ARSD College, University of Delhi, New Delhi, India.

• AREAS OF SPECIALIZATION

- **Electrochemical Materials Processing**
 - Green/Bio Hydrogen production and Reduction of CO₂ & N₂ via photo-electrocatalysts design
 - Bioelectrochemical treatment of industrial effluents
 - Electrochemical/Microbial Recovery & Recycling of e-wastes (end of life NdFe permanent magnets, spent Lithium-ion batteries, Silicon PVs) via electrowinning
 - Electrochemical Iron & Steel Manufacturing
 - Electrochemical Sensors
- **Advanced Multi-Functional Nanostructured Materials Making (including High Entropy Materials) via Electrodeposition/Green Synthesis: Combinatorial Alloy Design**

• PROFESSIONAL EXPERIENCE

- 2010-till now
(15 yrs) **Professor** (since 1st Sep 2020) and before **Associate Professor** (since 25th Jan 2016) and **Assistant Professor** at Department of Materials Science and Metallurgical Engineering, Indian Institute of Technology Hyderabad, India (<https://iith.ac.in/msme/suhash/>)
- 2009-2010
(1 yr 3 months) **Research Scientist** at Research Department: Integrity of small scale systems/high temperature materials, Institute of Materials, Ruhr-University Bochum, Germany.

- 2007- 2009
(2 years
2 months) **Alexander von Humboldt Research Fellow** at Institute of Structure physics, Technical University Dresden, Germany.
- 2006-2007
(1 year) **Post Doctoral Fellow** at Materials Research Department, Risø National Laboratory, Denmark.
- 2001-2002
(1½ years) **Research Associate**, Department of Materials and Metallurgical Engineering, Indian Institute of Technology, Kanpur, India.

• **ADMINISTRATIVE POSITIONS HELD AT IIT HYDERABAD (INDIA)**

- Head, Department of Materials Science and Metallurgical Engineering (2020-2023).
- TEQIP-KITE Center Coordinator, IIT Hyderabad (26th May 2016-30th September 2021); Brought more than INR 6 crores of funding from MHRD, India for various TEQIP activities at IIT Hyderabad.
- Chairman, Green Audit Team (2013-2017).
- Acting Head, Department of Materials Science and Metallurgical Engineering (Summer&Winter 2015 and Summer 2013).

• **RESEARCH GUIDANCE**

Post-Doctoral Scholars

Jun 2016-Dec 2023 **Dr. Chokkakula L.P. Pavithra**

- (i) June 2016-May 2018 (*Topic*: Synthesis and characterization of novel Ni-Cu-Graphene thin film libraries using combinatorial approach by electrodeposition) under **DST SERB (National Post-Doctoral Fellowship Scheme)**
- (ii) June 2018-Dec 2020 (*Topic*: Electrodeposition of nano-architected Multicomponent Alloys) (**Post-Doctoral Fellow**)
- (iii) Jan 2021-Dec 2022 (*Topic*: Microstructural evolution and structure-property correlations in FeCoNi based multi component alloy thin films) under **Indo-Sweden Joint Project (Research Associate-III)**
- * Founder of Elkemie Materials and Solutions Private Limited Start-Up
- * Visited as Research Fellow to Shanghai Jiao Tong University under MHRD-SPARC project for 3 months (Oct-Dec 2019)

Jan 2021-2024 **Dr. Dhanabal Rengasamy** (*Topic*: Investigations of Hole Transport Materials for an Efficient and Stable Inverted Perovskites Solar Cell Devices) under **CSIR (Research Associate)**

Ph.D. Scholars

Sept2010-Dec2015 **Dr. Palli Srinivas** (*Topic*: Theoretical and experimental studies of single metals (Cu and Ni) and binary Ni-Cu alloy electrodeposition in a modified Hull cell: A combinatorial approach); Successfully defended on 18th December 2015

- * Currently a Faculty at a College in Hyderabad
- * Institute Post-Doctoral Fellow, IIT Bombay (2 years)
- * Received **Best Oral Paper Award** for presenting “Development of Ni-Cu Materials Libraries by using Combinatorial Pulsed Electrodeposition” at ISRS 2012, IIT Madras, 13-15 December 2012.
- * Received **Best Oral Paper Award** for presenting “Experimental and Theoretical Study of Electrodeposition of Binary Ni-Cu Thin Film library” at COMBI14, Cairns, Australia, 6-8 October 2014.

Jan2011-Apr2018 **Dr. Karre Rajamallu** (*Topic*: Design and development of β Ti alloys through first principles calculations and powder metallurgy route for biomedical applications); Successfully defended on 28th April 2018

- * Currently a Post-Doctoral Fellow at Shanghai Jiao Tong University, Shanghai, China
- * Earlier Research Associate at IIT Hyderabad (6 months)
- * Visited Ritsumeikan University twice for doing partial work under Indo-Japan Collaboration and JASSO fellowship

- Jan2011-Sept2014 **Dr. Mandati Sreekanth** (*Topic: Fabrication of CuInSe_2 and Cu(In,Ga)Se_2 absorber layers by pulse and pulse-reverse electrochemical techniques for solar photovoltaic applications*); Successfully defended on 12th March 2015
 * Currently a Materials Scientist at Tallinn University of Technology, Estonia
 * Research Scientist at ARCI, Hyderabad
 * Earlier Post Doctoral Fellow, Tata Center for Technology and Design, IIT Bombay (1 year)
 * Received **INAE Innovative Students Projects Awards 2015**.
 * Received **Dr. K.V. Rao Scientific Society Young Scientist Award of citation 2014-15** in Chemistry.
 * **Bhaskara Advanced Solar Energy (BASE) Internship 2014** from Department of Science and Technology (DST), India and the Indo-U.S. Science and Technology Forum (IUSSTF) to spend six months at Professor Rakesh Agarwal's (Purdue University, USA) laboratory.
 * Received **Best Poster Presentation Prize** from his Ph.D. research work at 3rd EICOON School on "Science and Technology of renewable and Clean Energy Sources, held in Kolkata, India, 30th April-1st May 2012.
- Aug2011-Apr2018 **Dr. Sushmita Chaudhari** (*Topic: Dip coating of $\text{Cu}_2\text{ZnSn(SxSe}_{1-x})_4$ Absorber Layer for Solar Photovoltaic Applications*); Successfully defended on 24th April 2018
 * Currently a Faculty at Madhav Institute of Technology & Science in Gwalior
- Aug2011-Sept2018 **Dr. Basanth Kumar Kodli** (*Topic: Thermomechanical Processing, Microstructure and Texture Studies of TiHy 600 Alloy (a Near Alpha Titanium Alloy)*); Successfully defended on 4th September 2018
 * Currently a Faculty at a College in Hyderabad
 * Received **Best Oral Paper Award** for presenting "Peak stress studies of hot compressed TiHy 600 alloy" at International Conference on Advancements in Aeromechanical Materials for Manufacturing (ICAAMM-2016), Hyderabad, 7-9 July 2016.
- Aug2013-Oct2020 **Dr. P.K. Kannan** (*Topic: Development of vacuum-based CZTS/Se thin films for solar photovoltaic applications*); Successfully defended on 14th October 2020
 * **SERB-Purdue University Overseas Visiting Doctoral Fellowship 2018** from Department of Science and Technology (DST), India to spend one year at Professor Rakesh Agrawal's (Purdue University, USA) laboratory.
 * Currently a Faculty at Thiagarajar College of Engineering in Madurai
- Aug 2015-May2021 **Dr. Brijesh Singh Yadav** (*Topic: Investigation on inkjet printing of CIGS thin film absorber layer for solar cell application*); Successfully defended Ph.D. Thesis on 28th May 2021
 * Currently a Material Technologist at Saule Technologies Inc. in Wroclaw, Poland
 * Received DST-AWSAR Award 2021 for Best Popular Science Stories under the PhD Category
 * Received Research Excellence Award 2021 under the Ph.D. Category
- Jan 2016-now **Dr. Rameez R. Tamboli** (*Topic: Role of Aluminium addition in high strength interstitial free (IFHS) steel*); Successfully defended Ph.D. Thesis on 31st May 2023
 * Jointly guided by Dr. Basudev Bhattacharya (TATA Steel)
 * Received Research Excellence Award 2023 under the PhD Category
 * Currently a Research Manager at JSW
- Aug 2016-now **Dr. Kukkadapu Madhuri** (*Topic: Non-vacuum based fabrication route of CIGS thin film absorber for solar photovoltaic applications*); Successfully defended Ph.D. Thesis on 15th June 2023
 * DST INSPIRE Fellow (since September 2016)
 * Received Research Excellence Award 2021 under the PhD Category
 * Currently a Research Manager at reliance New Energy in Singapore
- Jan 2017-now **Dr. Kunda Siri Kiran Janardhana Reddy** (*Topic: Design and Development of FeCoNiCuZn High Entropy Alloy through Aqueous Electrodeposition*); Successfully defended OC on 25th May 2023
 * Received Research Excellence Award 2022 under the Ph.D. Category
 * Currently a Research Manager at Reliance New Energy in Jamnagar
- Aug 2021-now **Mr. Baswanta Sainath Patil** (*Topic: Additive manufacturing of 15-5 PH SS using SLM*)

* Jointly guided by Dr. S. Suresh (ARCI)

- Jul 2022-now **Ms. Neha Sharma** (*Topic: Development of multi-functional high entropy alloy nanostructured catalysts for hydrogen evolution reaction*)
* Jointly guided by Dr. Debaprasad Shee (Chemical Engineering, IIT Hyderabad)
- Jul 2022-now **Mr. Kushal Singh** (*Topic: Additive manufacturing of NiTi shape memory alloys for shape memory effect applications*)
* Jointly guided by Dr. J. John Rozario Jegaraj (DRDL, DRDO)
- Jul 2023-now **Mr. Abel Saka** (*Topic: Green Synthesis of Zinc Oxide Nanoparticles from Leaf Extracts of Medicinal Plants for Antimicrobial Applications*) under Joint Supervision Program with Dambi Dollo University, Dambi Dollo, Ethiopia
* Jointly guided by Prof. Dr. Krishnaraj Ramaswamy (Dambi Dollo University, Dambi Dollo, Ethiopia)
- Jan 2024-now **Ms. Yuva Keerthana** (*Topic: Hard carbon as anode material for sodium ion batteries*)
* Jointly guided by Dr. B.V. Sarada (ARCI)
- Jul 2024-now **Ms. Nehal Patel** (*Topic: Metal recovery from wastes using microbial fuel cell*)
* Jointly guided by Dr. Debraj Bhattacharya (Civil Engineering, IIT Hyderabad)
- Jul 2024-now **Mr. Arunkumar J.S.** (*Topic: Selective and sequential recovery of critical valuables from silicon solar module wastes and their electronic components as potential materials for circular economy*)
* Jointly guided by Sunil Kumar Maity (Chemical Engineering, IIT Hyderabad)
- Oct 2024-now **Mr. Ankur Srivastava** (*Topic: Fundamental understanding of electrochemical deposition of new quinary alloy system of transition elements deposited from aqueous electrolytes*)

Masters Theses

- 2010-2012 **Mr. Pankaj Sahlot** (*Topic: Friction stir welding (FSW) studies of dissimilar Al-based alloys using different pin profiles*)
* Received **First Prize in Poster Presentation** from his Master Thesis work at DMAT-2012, IT Banaras Hindu University, January 23-24, 2012.
* Faculty at NIT Kurukshetra
- 2010-2012 **Mr. Sajin George Sajjan** (*Topic: Friction stir welding of aluminum 6082 with mild steel and its joint analyses*)
- 2011-2013 **Mr. Bhupendra Sharma** (*Topic: Annealing effects on accumulative roll bonding of different purity aluminum*)
- 2012-2014 **Mr. Manish P. Meshram** (*Topic: Friction stir welding of austenitic steel and Ti64 alloy and their joint analyses*)
- 2012-2014 **Mr. Tushar Duryodhanrao Jogi** (*Topic: Development of Metal-Ceramic Thermoelectrics*)
- 2013-2015 **Mr. Sushil Yebaji** (*Topic: Microstructural studies of High Pressure Torsion Titanium alloy*)
- 2014-2016 **Mr. Rameez Tamboli** (*Topic: Similar friction stir welding of D6AC steel and Ti64 titanium alloy*)
- 2016-2018 **Mr. Harendra Kumar** (*Topic: Development of beta Ti-Nb-X(Zr,Sn) alloys through powder metallurgy for biomedical applications*)
- 2017-2019 **Mr. Dinesh** (*Topic: Fabrication of CZTSSe on flexible substrates through dip coating*)
- 2018-2020 **Mr. Vinay Periwal** (*Topic: Electrochemical synthesis of graphene-reinforced alloys and its applications*)

- 2019-2021 **Mr. Ashutosh Singh** (*Topic: Electrochemical synthesis of one-dimensional multicomponent alloys*)
- 2020-2022 **Mr. Rajesh Kumar** (*Topic: Electrochemical Recovery from waste Li-ion batteries*)
- 2020-2022 **Mr. Yaswanth R.** (*Topic: Electrochemical synthesis of modulated one-dimensional multicomponent alloys*)
- 2021-2023 **Mr. Dhruv Gupta** (*Topic: Electroless deposition for space applications*)
- 2021-2023 **Mr. Shubham Sharma** (*Topic: Sequential recovery of critical materials from photovoltaics ribbons*)
- 2021-2023 **Mr. Bhupendra Gehlot** (*Topic: Selective recovery of useful materials from photovoltaics modules*)
- 2023-2025 **Mr. Subhajit Das** (*Topic: Aqueous electrodeposition of a new high entropy materials*)

• RESEARCH GRANTS

- Title: "Synthesis and characterization of nanocrystalline metals through pulsed electrodeposition"; Funding agency: **Seed Grant, IIT Hyderabad (2010-2013)**; Sanctioned amount: **INR 5 lakhs**.
- Title: "Combinatorial design of nanostructured novel alloys through pulsed electrodeposition"; Funding agency: **CSIR (2012-2015)**; Sanctioned amount: **INR 7.5 lakhs**.
- Title: "Feasibility studies on joining austenitic stainless steel with other application-based alloys using friction stir welding process"; Funding agency: **BRNS, DAE (2012-2015)**; Sanctioned amount: **INR 13.65 lakhs**.
- Title: "Feasibility studies of joining titanium aluminides through friction stir welding"; Funding agency: **DST (Fast Track Scheme for Young Scientists) (2013-2016)**; Sanctioned amount: **INR 18.2 lakhs**.
- Title: "Development of novel high strength harmonic Ti-Nb-Sn compositions for biomedical applications"; Funding agency: **DST-JSPS S&T (2014-2016)**; Sanctioned amount: **INR 12.32 lakhs**
- Title: "Role of Aluminium addition in high strength interstitial free (IFHS) steel"; Funding agency: **TATA Steel (2016-2019)**; Sanctioned amount: **INR 33.12**.
- Title: "Synthesis and characterization of novel Ni-Cu-Graphene thin film libraries using combinatorial approach by electrodeposition"; Funding agency: **DST SERB (National Post-Doctoral Fellowship Scheme given to Dr. Chokkakula L.P. Pavithra to work in the research group of Dr. Suhash Ranjan Dey (2016-2018)**; Sanctioned amount: **INR 19.2 lakhs**.
- Title: "Enhancement of efficiency through modification of CIGS absorber layer by non-vacuum route for solar cell application"; Funding agency: **DST INSPIRE Fellowship given to Ms. Kukkadapu Madhuri to work in the research group of Dr. Suhash Ranjan Dey** (Starting date: **2016-2021**); Sanctioned amount: **nearly INR 21.9 lakhs**.
- Title: "Tuning the magnetic properties of nanocrystalline multi-component alloy thin film coatings through a single step electrodeposition for sensor applications"; Funding agency: **MHRD-SPARC** (Scheme for Promotion of Academic and Research Collaboration) (**2019-2023**); Sanctioned amount: **INR 50 lakhs** with Shanghai Jiao Tong University, CHINA.
- Title: "Microstructural evolution and structure-property correlations in FeCoNi based multi component alloy thin films"; Funding agency: Indo-Sweden **DST-VR** Joint Call (**2020-2023**); Sanctioned amount: **INR 43,67,840** with Chalmers University of Technology, SWEDEN.
- Title: "Anti-viral coatings of electrochemically reduced metal nanoparticles for respirators"; Funding agency: Interdisciplinary Project, IIT Hyderabad (**2020-2022**); Sanctioned amount: **INR 10 lakhs** with Dr. Raghavendra N.K. (Biotechnology, IIT Hyderabad) as a co-PI.

- Title: “Cobalt nanowire-PEG fortified hydrogels to stimulate stem cells magnetically and deliver drugs locally for osteoarthritis patients”; Funding agency: Interdisciplinary Project, IIT Hyderabad (**2020-2022**); Sanctioned amount: **INR 10 lakhs** with Dr. Subha Narayan Rath (Biomedical Engineering, IIT Hyderabad) as a PI.
- An Incubation Support for a Start-Up under NICE (NMDC Innovation and Incubation Centre) Program; Funding agency: **NMDC and i-TIC Foundation (IIT Hyderabad)**. Founder: Dr. Chokkakula L.P. Pavithra and Co-Founder: Dr. Suhash Ranjan Dey (**2021-2023**); Sanctioned amount: **INR 25 lakhs**.
- Title: “Fundamental understanding of electrochemical deposition of new quinary alloy system of transition elements deposited from aqueous electrolytes”; Funding agency: CSIR (Starting date: **2nd November 2023**); Sanctioned amount: **INR 30.68 lakhs** for three years.
- Title: “Exploring ancient Indian panchadhatu/asthadhatu-making with new compositions and combinations for modern age applications”; Funding agency: DST-SHRI (Starting date: **October 2024** for three years); Sanctioned amount: **INR 90.45 lakhs** with Prof. Raja Banerjee (MAE, IIT Hyderabad) as a co-PI.

• PROFESSIONAL AFFILIATIONS

- Life Member, Electrochemical Society of India (ECSI)
- Life Member, Materials Research Society of India (MRSI)
- Life Member, Indian Institute of Metals (IIM); *Executive Council Member* (2025-26); *Chairperson, ATM 2025*, IIT Hyderabad
- Life Member, Indian Institute of Welding (IIW)
- Life Member, Solar Energy Society of India (SESI)
- Life Member, Electron Microscopy Society of India (EMSI)
- **Reviewer of Journals/Projects:** Matter; Intermetallics; Metallurgical and Materials Transactions A; Materials Science and Engineering C, Journal of Alloys and Compounds, Journal of Materials Chemistry A, Materials Science and Technology, Journal of Materials Engineering and Performance, Sadhana, Bulletin of Materials Science, Applied Surface Science, Journal of Applied Physics, Journal of Nanomaterials, Optical Materials, Journal of Physics and Chemistry of Solids, Solid State Communications, CEFIPRA projects, BRNS projects, DST-IMPRINT
- National Advisory Committee Member of ICORE 2023, Kochi
- National Advisory Committee Member of IIM-ATM 2022, Hyderabad
- National Advisory Committee Member of Innovations in Chemical Engineering-2013 (ICE 2013), BITS Hyderabad, November 15-16 2013
- Co-coordinator of sub-theme: Energy Materials (domain: Advanced Materials) in IMPRINT
- National Advisory Committee Member of International Conference on Sustainable Engineering and Technology (IconSET 2018), ACS College of Engineering, Bengaluru, April 19-20 2018

• AWARDS / SCHOLARSHIPS

- **Executive Council Member** in the **IIM** (2025-2026).
- **Member** in the **IIM Publications Committee** (2023-till now).
- **Executive Council Member** in the **Electron Microscopy Society of India** (2023-till now).
- Selected as **Associate Editor** in the Editorial Board of **Bulletin of Materials Science** (Impact Factor 1.878).
- **Bhaskara Advanced Solar Energy (BASE) Fellowship 2014** from Department of Science and Technology (DST), India and the Indo-U.S. Science and Technology Forum (IUSSTF).
- **IEI Young Engineers Award 2013-14** from the Institution of Engineers (INDIA) in Metallurgical & Materials Engineering discipline. The award consists of INR 10,000/- and a Citation.
- **DAE Young Scientist Research Award 2012** from BRNS, DAE for the research project “Feasibility studies on joining austenitic stainless steel with other application-based alloys using friction stir welding process”.
- **Humboldt Research Fellowship** from Alexander von Humboldt Foundation, Germany (2006).
- **Cover page illustration in Journal of Microscopy** (volume 227, issue 3, September 2007) of SEM-EBSD microstructure image of Ti-23Al-25Nb alloy.

- Awarded the **best title in Ph.D.** at University of Metz, France “Très honorable avec félicitations du jury” (2006).
- **Best Poster Award** in ICSMA14 Conference in 2006 at Xi'an, China.
- Received **Scholarship “Bourse de fond de thèse”** (Ministry of Research, France) for Ph.D. (2002-2006).
- Cleared GATE-2000 (India) in Chemistry.
- Cleared Junior Research Fellowship from the Council of Scientific & Industrial Research (CSIR), India (2000) in Chemistry.
- Stood **First in B.Sc. Chemistry (Hons.)** at ARSD college, University of Delhi (1995-1998).

• SEMINARS/SYMPOSIA ORGANIZED

- The Indian Institute of Metals ATM 2022, Hyderabad, India; National Organizing Committee.
- Organized 6-day Workshop on *Advanced Materials Characterization Techniques (under MHRD, SPARC)*, Aug 27-Sep 1, 2019 at Indian Institute of Technology Hyderabad, India.
- Organized 10 days course of *Electron Microscopy: Basics and Applications (under MHRD, GIAN)*, July 18-29, 2016 at Indian Institute of Technology Hyderabad, India.
- Organized *Equilibrium Phase Transformations of Metallic Systems (TEQIP Workshop)*, July 17-23, 2016 at Indian Institute of Technology Hyderabad, India.
- Organized *Materials Microstructure Characterization using Optical and Scanning Electron Microscopy (TEQIP Workshop)*, December 20-24, 2015 at Indian Institute of Technology Hyderabad, India.
- Organizer of *Advanced Materials Characterisation Techniques (TEQIP Workshop)*, November 1-2, 2014 at Indian Institute of Technology Hyderabad, India.
- Organizing Member of *Fourth International Congress on Computational Mechanics and Simulation (ICCMS 2012)*, December 9-12, 2012 at Indian Institute of Technology Hyderabad, India.
- Organizing Member of *Sixth National Symposium on Frontiers of Engineering (NatFOE-2011)*, September 2-3, 2011 at Indian Institute of Technology Hyderabad, India.

• INTERNATIONAL COLLABORATIONS

- Invited Professor at Shanghai Jiao Tong University, China, December 2019 for 10 days
- Invited Professor at Purdue University, USA, June 2019 for half month
- Invited Professor at University Paul-Verlaine Metz, France, May-June 2017 for one month
- Guest Professor at Prof. Kei Ameyama's group, Ritsumeikan University, Japan in June-July 2015 (40 days) under DST-JSPS joint project
- Bhaskara Advanced Solar Energy (BASE) fellowship in May-July 2014 (2.5 months) in Dr. David Ginley's group at National Renewable Energy Laboratory (NREL), USA
- Japan International Cooperation Agency (JICA)-IIT Hyderabad FRIENDSHIP visit to Prof. Nobuhiro Tsuji, Kyoto University and Prof. Kei Ameyama, Ritsumeikan University, Japan, July 2013 for 13 days
- Alexander von Humboldt Guest Scientist at Materials Science and Engineering, Ruhr-University Bochum, Germany, May-July 2012 for 2½ months
- Invited Professor at University Paul-Verlaine Metz, France, June-July 2011 for one month
- Alexander von Humboldt Guest Scientist at Institute for Structure Physics, Technical University Dresden, Germany, May-June 2011 for one month

• LANGUAGES KNOWN

Bengali	Mother Tongue	French	Good
Hindi	Excellent	German	Fair (cleared “Zertifikat Deutsche” examination)
English	Excellent		

• PUBLICATIONS/PATENTS

• Patents

1. High entropy alloy and quinary alloy nanowires.
Chokkakula L.P. Pavithra, **Suhash Ranjan Dey** and Kunda Siri Kiran Janardhana Reddy, **Indian Patent**, Patent No. 566508 (Granted).
2. Single step electrochemical synthesis of nanocrystalline multicomponent alloy thin films/coatings in an aqueous medium.
Chokkakula L.P. Pavithra, Kunda Siri Kiran Janardhana Reddy and **Suhash Ranjan Dey**, **Indian Patent**, Patent No. 451603 (Granted).

• Book/Volume/Compendium Chapter/Review Article

3. Advances on multi-dimensional high-entropy alloy nanoarchitectures: Unconventional strategies and prospects.
C.L.P. Pavithra and **Suhash R. Dey**, **Nano Select**; 4 (1), 2023, 48-78. (<https://doi.org/10.1002/nano.202200081>)
4. Perovskite solar cells: recent progress and strategies developed for minimizing interfacial recombination.
Rengasamy Dhanabal and **Suhash R. Dey**, **Frontiers of Materials Science**;16(2), 2022, 220595. (IF: 2.612)
5. Advancements in therapeutics via 3D printed multifunctional architectures from dispersed 2D nanomaterial inks.
Pritam K. Chakraborty, J. Azadmanjiri, C.L.P. Pavithra, X. Wang, Syed H. Masood, **Suhash R. Dey**, James Wang, **Small**; 16 (49), 2020, 2004900. (<https://doi.org/10.1002/sml.202004900>) (IF: 15.153)
6. Progress in development of novel material libraries fabricated by combinatorial electrodeposition: Theoretical and experimental studies.
P. Srinivas and **Suhash R. Dey**, In: Saleem Hashmi (editor-in-chief), **Reference Module in Materials Science and Materials Engineering**, Oxford: Elsevier; 2019. pp. 1-36. (<https://doi.org/10.1016/B978-0-12-803581-8.10377-7>)
7. Progress in development of beta titanium alloys for biomedical applications.
Rajamallu K. and **Suhash R. Dey**, **Encyclopedia of Smart Materials**, 2021. pp. 512-527. (10.1016/B978-0-12-803581-8.10501-6)
8. Progress in development of CZTS for solar photovoltaics applications.
P.K. Kannan, Sushmita Chaudhari, **Suhash R. Dey** and M. Ramadan, **Encyclopedia of Smart Materials**, 2021. pp. 681-698. (10.1016/B978-0-12-815732-9.00130-3)
9. Pulsed electrochemical deposition of CuInSe₂ and Cu(In,Ga)Se₂ semiconductor thin films. (Book Chapter)
Sreekanth Mandati, Bulusu V. Sarada, **Suhash Ranjan Dey** and Shrikant V. Joshi, **Semiconductors-Growth and Characterization**, Intechopen, 2017, ISBN 978-953-51-5589-8.
10. Deformation mechanisms in nanocrystalline nickel at low temperatures. (Book Chapter)
L. Hollang, K. Reuther, **S.R. Dey**, E. Hieckmann and W. Skrotzki, **Advanced Mechanical Properties and Deformation Mechanism of Bulk Nanostructure Materials**, Materials Science Forum, Trans Tech Publications, Switzerland, 683, 2011, 193-201.

• Articles in International Refereed Journals

11. Fabrication of Hypoxia-Mimicking Supramolecular Hydrogels for Cartilage Repair.
Subhashini Ravi, C.L.P. Pavithra, **Suhash Ranjan Dey**, Subha Narayan Rath*, **ACS Applied Bio Materials**; 2025, In Press. (doi: <https://doi.org/10.1021/acsabm.4c01576>) (IF: 4.7)
12. Investigating antibacterial activity of biosynthesized silver oxide nanoparticles using *Phragmanthera Macrosolen* L. leaf extract.
Abel Saka, **Suhash Ranjan Dey**, Leta Tesfaye Jule, Ramaswamy Krishnaraj, Rengasamy Dhanabal, Neha Mishra, N Nagaprasad, **Scientific Reports**, 14, 2024, 26850. (doi: <https://doi.org/10.1038/s41598-024-75254-y>) (IF 3.8)
13. Exploration of the high-cycle fatigue properties of Al-rich interstitial free steels stabilized by Ti and Nb.

- Benjamin Guennec, Rameez R. Tamboli, Kentaro Nagano, Takahiro Kinoshita, Noriyo Horikawa, Hiroshi Fujiwara, Basudev Bhattacharya, **Suhash R Dey***, **International Journal of Fatigue**, 2024, 108674. (doi: <https://doi.org/10.1016/j.ijfatigue.2024.108674>) (IF 5.7)
14. Nanoindentation and isothermal compression behaviour of Al-4Cu-Ni.
Ganesh V., Rameez R. Tamboli, Asit Kumar Khanra and **Suhash R. Dey**, **Vacuum**, 2024, 113251. (doi: <https://doi.org/10.1016/j.vacuum.2024.113251>) (IF 3.8)
 15. Caffeine additive based nanoarchitectonics of methylammonium lead iodide (MAPbI₃) perovskite solar cell device: investigations on charge carrier properties using AC impedance spectroscopy.
Rengasamy Dhanabal, Dhivyaprasath Kasinathan, Ashok Mahalingam, K. Madhuri, Arumugam Chandra Bose, and **Suhash Ranjan Dey**, **Journal of Materials Science: Materials in Electronics**, 34, 2023, 2205. (doi: <https://doi.org/10.1007/s10854-023-11569-2>) (IF 2.8)
 16. Compositional modulation through galvanic displacement in electrochemically deposited FeCoNiCuZn high entropy alloy thin films.
Reddy Kunda Siri Kiran Janardhana, Chokkakula L. P. Pavithra*, and **Suhash Ranjan Dey***, **Materials Letters**, 350, 2023, 134941. (doi: <https://doi.org/10.1016/j.matlet.2023.134941>) (IF 3.574)
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