

Allegato alla domanda di partecipazione
Curriculum formativo, didattico, scientifico e professionale del candidato

Dichiarazione sostitutiva di certificazioni

(Art. 46, D.P.R. 28 dicembre 2000 n. 445)

Dichiarazione sostitutiva dell'atto di notorietà

(da sottoscrivere davanti all'impiegato addetto o da presentare o spedire con la fotocopia di un documento di identità)

(Art. 47, D.P.R. 28 dicembre 2000 n. 445)

Estremi del bando di selezione	
Informazioni aggiornate al	
Nome e Cognome	Aditya Bhardwaj
Data di nascita	26-08-1994

Si raccomanda di indicare con precisione tutti gli elementi valutabili ai sensi del bando di selezione (aggiungere o togliere righe secondo necessità).

Esperienza professionale

Periodo	Ente	Principali attività e responsabilità
21 August 2018- 31 March 2021	Indian Institute of Technology (IIT) Indore, Madhya Pradesh, India	Worked as a Research Fellow in DST-SERB project titled-Lead free inorganic halide perovskite nanostructures for solution processable photovoltaic cell. The aim of the project was to synthesize and characterize lead-free inorganic halide perovskite nanostructures and investigate the cause of instability and explore lead substitutes. The project also investigated the light-harvesting properties of Pb and Pb-free inorganic halide nanostructures through size, shape, composition control, and surface capping. The final objective of the project was to fabricate a lead-free stable perovskite solar cell with good stability under ambient conditions.
December 2017- May 2018	Panjab University, Chandigarh, India	In this research, a piezoelectric nanocomposite nanogenerator was fabricated by combination of piezoelectric ceramic- Zinc stannate- $ZnSnO_3$ and a piezoelectric polymer-PVDF-HFP. By a simple wet chemical approach, $ZnSnO_3$ -PVDF-HFP films were obtained. $ZnSnO_3$ nanoparticles were uniformly dispersed in the polymer matrix. Various weight concentrations of $ZnSnO_3$ (10 wt.%, 15 wt.%) were taken to check the variation in output voltage. Maximum output voltage of 7.5 V and short circuit current of 35.95 nA was obtained for 15 wt.% dispersion of $ZnSnO_3$. The nanogenerator was able to charge a $2.2\Omega F$ capacitor to 0.81 V in 300 seconds.

December 2015- May 2016	Sri Guru Granth Sahib World University (SGGSWU) Fatehgarh Sahib, Punjab, India	Herein, synthesis and characterization of graphene oxide was investigated for its photocatalytic and antibacterial applications. Synthesis of graphene oxide was done with help of Hummer's method and prepared material was characterized by UV-Vis spectroscopy, FTIR, which confirmed the oxidation of graphite completely, resulting in homogenous graphene oxide formation. Photocatalysis was performed to check Methyl orange dye degradation. Antibacterial activity was also checked on E.Coli and Bacillus. The graphene oxide showed peak at 230nm and FTIR peaks were able to completely identify the functional groups attached to graphene. Experiments on photocatalysis of Methyl orange and antibacterial activity confirmed that GO could also function as an effective photocatalyst and antibacterial material. Part of the work was published as a research article.
1 June 2015- 15 July 2018	Institute of Nano Science and Technology (INST) Mohali, Punjab, India	Worked as a Research Intern at INST Mohali. In this research work, a nanoparticulate platform using biocompatible material (Poly L Lactide) is presented for generating therapeutic levels of nitric oxide (NO) in a controlled and sustained manner. During this research internship, one poster was also presented in a conference.
2 June 2014- 16 July 2014	Indian Institute of Technology (IIT) Ropar, Punjab, India	Worked as a Research Intern at IIT Ropar. The goal of the project was to understand and investigate the influence of Sub-Bragg diffraction in 2-D photonic crystals.

Istruzione, formazione (es. titoli di studio, certificazioni professionali/linguistiche/informatiche)

Data	Titolo / Principali tematiche	Ente
December 2018- November 2022	Doctor of Philosophy (Ph.D.) in Metallurgical Engineering and Materials Science	Indian Institute of Technology (IIT) Indore, Madhya Pradesh, India
July 2016- June 2018	Master of Technology (M.Tech) in Nano Science and Nano Technology	Panjab University, Chandigarh, India
July 2012- June 2016	Bachelor of Technology (B.Tech) in Nanotechnology	Sri Guru Granth Sahib World University (SGGSWU), Fatehgarh Sahib, Punjab, India
July 2011- June 2012	Higher Secondary School in Non-Medical majoring in Physics, Chemistry and Mathematics	Ajit Karam Singh International Public School (AKSIPS), Sector 41-B, Chandigarh, India

July 2009- June 2010	Secondary School in Science	Ajit Karam Singh International Public School (AKSIPS), Sector 41-B, Chandigarh, India
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Publicazioni / Convegni

1. Bhardwaj, A., & Kushwaha, A. K. (2023). Optical and photoelectrical properties of low-concentration-Mn-doped CsPbBr ₃ nanocrystals. <i>Nanomaterials and Energy</i> , 40(XXXX), 1-10.
2. Maurya, A., Mohapatra, L., Suman, S., Bhardwaj, A., & Kushwaha, A. K. (2023). Scan Rate Dependent Size and Density-Controlled Deposition of Ni-Co Alloy Particles for Hydrogen Evolution Reaction. <i>Journal of Materials Engineering and Performance</i> , 1-8.
3. Bhardwaj, A., & Kushwaha, A. K. (2022). Synthesis, Ambient storage stability and optoelectronic properties of Mn-doped CsPbBr ₃ perovskite crystals. <i>Applied Physics A</i> , 128(10), 856.
4. Maurya, A., Suman, S., Bhardwaj, A., Mohapatra, L., & Kushwaha, A. K. (2023). Substrate Dependent Electrodeposition of Ni-Co Alloy for Efficient Hydrogen Evolution Reaction. <i>Electrocatalysis</i> , 14(1), 68-77.
5. Bhardwaj, A., & Kushwaha, A. K. (2022). Capping ligands controlled structural and optoelectronic properties of CsPbBr ₃ nanocrystals. <i>Journal of Materials Science: Materials in Electronics</i> , 33(21), 17404-17416.
6. Bhardwaj, A., & Kushwaha, A. K. (2022). Effect of Dispersion Solutions on Optical Properties and Stability of CsPbBr ₃ Perovskite Nanocrystals. <i>ECS Journal of Solid State Science and Technology</i> , 11(3), 036002.
7. Mukurala, N., Suman, S., Bhardwaj, A., Mokurala, K., Jin, S. H., & Kushwaha, A. K. (2021). Cu ₂ FeSnS ₄ decorated Ni-TiO ₂ nanorods heterostructured photoanode for enhancing water splitting performance. <i>Applied Surface Science</i> , 551, 149377.
8. Singh, M., Bajaj, N. K., Bhardwaj, A., Singh, P., Kumar, P., & Sharma, J. (2018). Study of photocatalytic and antibacterial activities of graphene oxide nanosheets. <i>Advanced Composites and Hybrid Materials</i> , 1, 759-765.
9. Oral presentation at International conference in Frontiers of Materials Engineering (ICFME-2022), Indian Institute of Technology, Indore, 14-16 December 2022.
10. Poster presentation at International Conference on nanoscience and technology (ICONSAT-2020), S.N Bose Centre of Basic Science, Kolkata, 5-7 March 2020.
11. Poster presentation at International Conference on Advanced Materials and Nanotechnology (AMN-2020), Jaypee Institute of Information Technology (JIIT), Noida, 20-22 February 2020.
12. Poster presentation at 1st CRIKC Nanoscience Day, Institute of Nano Science and Technology (INST), Mohali, 21 July 2015.

Altre attività scientifiche

1. Book Chapter 1: Kushwaha, A. K., Kalita, H., Suman, S., Bhardwaj, A., & Ghosh, R. (2021). Two-dimensional (2D) thermoelectric materials. In <i>Thermoelectricity and advanced thermoelectric materials</i> (pp. 233-260). Woodhead Publishing.
2. Book Chapter 2: Kushwaha, A. K., Kalita, H., Bhardwaj, A., Suman, S., Dehingia, B., & Mishra, R. K. (2020). Application of Nanotechnology in Detection and Prevention of COVID-19. <i>Integrated Risk of Pandemic: Covid-19 Impacts, Resilience and Recommendations</i> , 361-395.

Ulteriori informazioni pertinenti

1. Fellowship Awardee in DST-SERB sponsored project at Indian Institute of Technology Indore.
2. Graduated with Master's degree in first division with distinction.
3. Passed PU-CET(PG) 2016 entrance exam for admission to Master's Programme.

Luogo, data e firma