

**ALLEGATO B****Curriculum formativo, didattico, scientifico e professionale del candidato**

<b>Dichiarazione sostitutiva di certificazioni</b> (Art. 46, D.P.R. 28 dicembre 2000 n. 445) <b>Dichiarazione sostitutiva dell'atto di notorietà</b> (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)
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<b>Estremi del bando di selezione</b>	BANDO N. 27/2025 – REP. 565 del 25/11/2025 SELEZIONE PER L'ATTRIBUZIONE DI N. 1 BORSA DI RICERCA DAL TITOLO: Test in situ di un protipo di sistema compatto LIBS+Raman integrato – Responsabile scientifico prof. Pier Carlo Ricci
<b>Informazioni aggiornate al</b>	15/12/2025
<b>Nome e Cognome</b>	SASWATI BAGCHI
<b>Data di nascita</b>	

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

**Esperienza professionale**

<b>Periodo</b>	<b>ENTE</b>	<b>Principali attività e responsabilità</b>
01/11/2022-30/10/2025	University of Perugia & University of Cagliari, Italy Ph.D. Student (Doctorate of National Interest in "Photoinduced Processes and Technologies")	The 3-year thesis investigation involves the synthesis of phenyl-modified graphitic carbon nitride (g-C <sub>3</sub> N <sub>4</sub> ), the investigation of its exfoliation and composite formation, and the evaluation of its visible-light photocatalytic performance for dye degradation and solar hydrogen production.
01/07/2024-28/02/2025	University of Twente, Enschede, Netherlands Guest Researcher (Period Abroad)	Research activities were conducted on metal nanoparticle-modified and phenyl-functionalized graphitic carbon nitride photocatalysts for visible-light-driven water splitting, correlating hydrogen evolution performance and stability with photocatalyst properties. The work included photocatalyst synthesis and exfoliation, operation of photocatalytic reactors with online gas analysis, comprehensive structural and spectroscopic characterisation, and evaluation of solar-to-hydrogen conversion efficiency above 400 nm.
01/07/2021-30/06/2022	Birla Institute of Technology, Mesra, Ranchi, India Masters' Project + research intern	* Structural, microstructural, ferroelectric, and piezoelectric investigation of porous NaNbO <sub>3</sub> using advanced thermal, structural, electrical, and dielectric characterisation techniques. * Temperature-dependent phase, dielectric, ferroelectric, electrocaloric, and piezoelectric studies of porous NaNbO <sub>3</sub> employing high-temperature XRD and calorimetric analyses. * Development of NaNbO <sub>3</sub> -Bi-based lead-free ceramic solid solutions for piezoelectric sensor applications, with composition-dependent structural, ferroelectric, piezoelectric, and relaxor dielectric property evaluation.

01/06/2018-25/06/2018	HEAVY ENGINEERING CORPORATION LIMITED (HEC) (a government of India Enterprise) Dhurwa, Ranchi, India Industrial Vocational Trainee	placed at the FOUNDARY FORGE PLANT (Technical Service Department, instrumentation, testing laboratory)
15/05/2017-11/06/2017	Summer Project Internship Dr Ela Rout, Assistant Professor, Birla Institute of Technology, Mesra, India	STRUCTURAL AND OPTICAL PROPERTIES OF DIELECTRIC MATERIA (ZINC MOLYBDATE) Characterisation of zinc molybdate: sample preparation by solid state method, x-ray diffraction (XRD), UV visible spectroscopy, photoluminescence study (PL).

**Istruzione, Formazione (es. Titoli do studio, Certificazioni Professionali/Linguistiche/informatiche)**

<b>Data</b>	<b>Titolo/Principali Tematiche</b>	<b>Ente</b>
2016-2021	Integrated Master of Science, Physics (Condensed matter Physics) Master's Thesis title: Developing Solid Solution of NaNbO <sub>3</sub> & Bi-based Lead-free Ceramics for Piezoelectric Sensor Application	Birla Institute of Technology, Mesra, India
2003-2016	Senior Secondary, Medium and Primary School Physics, Chemistry, Mathematics, English, Physical Education, Fine Arts – 7.56/10 GPA	DELHI PUBLIC SCHOOL, RANCHI-834004, Jharkhand, India
<b>Certificazioni Professionali</b>		
Participation in workshop courses ( <b>ONLINE</b> )		
10/09/2025-12/09/2025	Mass Spectrometry Workshop	<a href="https://metachemacademy.com/">https://metachemacademy.com/</a>  Dr Syed Zahid Hassan, Workshop Instructor & Organiser, Director, MetaChem Academy Research Professor at Pohang University of Science and Technology, South Korea
22/09/2025-23/09/2025	Chemical Structure Drawing Workshop	
11/10/2025-12/10/2025	Atomic Force Microscopy: Principles & Applications Workshop	
17/09/2025-19/09/2025	Metal–Organic Framework Workshop	
01/10/2025-03/10/2025	Bench-to-Sample Organic Synthesis Workshop	
29/09/2025-30/09/2025	Effective Research Paper Writing & Publishing Workshop-6	
16/10/2025-17/10/2025	Electrochemical Impedance Spectroscopy Workshop	
25/09/2025-26/09/2025	XRD Fundamentals & PXRD Applications Workshop	
22/10/2025-24/10/2025	NMR Spectroscopy Workshop	

## Publicazioni/Convegni

<b>Publicazioni</b>
Bagchi, S., Kushvaha, D. K., & Rout, S. K. (2023). Phase formation mechanism and piezoelectric behaviour of NANBO3 ceramic. <i>ECS Journal of Solid State Science and Technology</i> , 12(12), 123008. <a href="https://doi.org/10.1149/2162-8777/ad15a6">https://doi.org/10.1149/2162-8777/ad15a6</a>
Bagchi, S., Corpino, R., Abudukade, M. T., Rusta, N., Porcu, S., & Ricci, P. C. (2025). Phenyl-modified carbon nitride nanosheets: Enhanced photocatalytic activity via sonication-assisted exfoliation. <i>Journal of Physics and Chemistry of Solids</i> , 210, 113361. <a href="https://doi.org/10.1016/j.jpics.2025.113361">https://doi.org/10.1016/j.jpics.2025.113361</a>
<b>Convegni</b>
School of Photochemistry: from Photocatalysis to Photobiology, Padua, Italy (summer school) at the University of Padua. Poster presentation in “Exfoliated Phenyl modified Carbon Nitride as an efficient Photocatalyst activated in the visible Region”
12th European Conference on Solar Chemistry and Photocatalysis: Energy and Environmental Applications, SPEA12 at Ulster University, Belfast, UK ORAL Presentation in “Exfoliated Phenyl modified Carbon Nitride as an efficient photocatalyst activated in the visible region”
European Materials Research Society EMRS 2024 (FALL) Meeting, Warsaw University of Technology (Politechnika Warszawska), Warsaw, Poland ORAL Presentation “adsorption-derived visible light photocatalytic degradation of dyes using phenyl-modified graphitic carbon nitride (PhCN)/strontium titanate (STO) composite”
2023 ECerS Summer School on Advanced Characterisation Techniques in Institut National des Sciences Appliquées de Lyon (INSA Lyon), Lyon, France

## Altre attività Scientifiche

Participated in MACCS2 2nd International Workshop on "Modelling and Characterisation of Complex Systems on 17th June, 2025, in University of Cagliari AND presented a poster
Attended the CASSINI Junior 2022 seminar “Applied Sustainability: Today and Tomorrow” on 31st March 2023 at Cagliari, Italy, sponsored by the Institut Francais Italia and Dept. of Physics, University of Cagliari
Volunteered in the International Day of Women in Science 2023, Fisica on 10th February, University Of Cagliari, Italy
CESAREF Training Day on “X-ray scattering and diffraction using synchrotron radiation: Quantitative analysis of the microstructure of polycrystalline materials” in Institut National des Sciences Appliquées de Lyon (INSA), Lyon on 1 <sup>st</sup> July 2023
Five-day DST (Department of Science and Technology, Government of India) Sponsored Online Workshop on Advances in Solar Photovoltaic – Emerging Materials and Technologies 16-20 february 2022 at Birla institute of Technology, Mesra, India

## Ulteriori informazioni pertinenti

<b>Computational Skills</b> CASA XPS, Glotaran, Mede A VASP, GSAS-II, Full-prof , X’Pert high score, PDXL-ICDD, VESTA,IMAGEJ, Origin Pro 2021, AutoCAD, CREO-parametric, Ultimaker Cura, MS-PowerPoint, ENDnote NOTE: MS-Excel, MS- Word, C, Data Structures, Java.
<b>Laboratory Skills</b> Solid state synthesis, Hydrothermal synthesis, Wet impregnation, Photodeposition synthesis, Gas analyser using Mass spectroscopy -Gas chromatography, pelletizer, Instrumentation, Raman spectroscopy, TF analyser

(FERRO, PIEZO) Solatron (Dielectric, Impedance), X -ray diffractometer, UV visible Spectroscopy, photoluminescence spectroscopy, Time Resolved photoluminescence spectroscopy.

Cagliari, Italy 15/12/2025



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