Consiglio Nazionale
delle **Ricerche**
Istituto di Chimica dei Composti Organometallici (ICCOM)

ALLEGATO B

DICHIARAZIONI SOSTITUTIVE DI CERTIFICAZIONI
(art. 46 D.P.R. n. 445/2000)

DICHIARAZIONI SOSTITUTIVE DELL'ATTO DI NOTORIETÀ
(art. 47 D.P.R. n. 445/2000)

..l... sottoscritt...

COGNOME BAJPAI
(per le donne indicare il cognome da nubile)

NOME OM PRAKASH

NATO A·
PROV.

IL

ATTUALMENTE RESIDENTE A:

PROV.

INDIRIZZO **C.A.P.**

TELEFONO

Visto il D.P.R. 28 dicembre 2000, n. 445 concernente "T.U. delle disposizioni legislative e regolamentari in materia di documentazione amministrativa" e successive modifiche ed integrazioni;

Vista la Legge 12 novembre 2011, n. 183 ed in particolare l'art. 15 concernente le nuove disposizioni in materia di certificati e dichiarazioni sostitutive *(*)*;

Consapevole che, ai sensi dell'art.76 del DPR 445/2000, le dichiarazioni mendaci, la falsità negli atti e l'uso di atti falsi sono punite ai sensi del Codice penale e delle leggi speciali vigenti in materia, dichiara sotto la propria responsabilità:

che quanto dichiarato nel seguente curriculum vitae et studiorum comprensivo delle informazioni sulla produzione scientifica corrisponde a verità

Curriculum vitae et studiorum

CNR-ICCOM Sede di Firenze
Via Madonna del Piano 10 – 50019 Sesto Fiorentino (FI)
Tel. 055 522 5280 (Direttore) – direttore@iccom.cnr.it
Tel. 055 522 5281-78-79 (Segreteria FI) – segreteria.fi@iccom.cnr.it
PARTITA IVA N. 02118311006 – CODICE FISCALE N. 80054330586

studi compiuti, i titoli conseguiti, le pubblicazioni e/o i rapporti tecnici e/o i brevetti, i servizi prestati, le funzioni svolte, gli incarichi ricoperti ed ogni altra attività scientifica, professionale e didattica eventualmente esercitata **(in ordine cronologico iniziando dal titolo più recente)**

Es: descrizione del titolo .....

data ..... *protocollo* .....

rilasciato da .....

periodo di attività dal ..... *al* .....

FIRMA (**)

.....

(*) ai sensi dell'art. 15, comma 1 della Legge 12/11/2011, n. 183 le certificazioni rilasciate dalla P.A. in ordine a stati, qualità personali e fatti sono valide e utilizzabili solo nei rapporti tra privati; nei rapporti con gli Organi della Pubblica Amministrazione e i gestori di pubblici servizi, i certificati sono sempre sostituiti dalle dichiarazioni sostitutive di certificazione o dall'atto di notorietà di cui agli artt. 46 e 47 del DPR 445/2000

N.B:

1) Datare e sottoscrivere tutte le pagine che compongono la dichiarazione.
2) Allegare alla dichiarazione la fotocopia di un documento di identità personale, in corso di validità.
3) Le informazioni fornite con la dichiarazione sostitutiva devono essere identificate correttamente con i singoli elementi di riferimento (esempio: data, protocollo, titolo pubblicazione ecc...).
4) Il CNR, ai sensi dell'art. 71 e per gli effetti degli artt. 75 e 76 del D.P.R. 445 del 28/12/2000 e successive modifiche ed integrazioni, effettua il controllo sulla veridicità delle dichiarazioni sostitutive.
5) La normativa sulle dichiarazioni sostitutive si applica ai cittadini italiani e dell'Unione Europea.
6) I cittadini di Stati non appartenenti all'Unione, regolarmente soggiornanti in Italia, possono utilizzare le dichiarazioni sostitutive di cui agli artt. 46 e 47 del D.P.R. 445 del 28.12.2000 limitatamente agli stati, alla qualità personali e ai fatti certificabili o attestabili da parte di soggetti pubblici italiani, fatte salve le speciali disposizioni contenute nelle leggi e nei regolamenti concernenti la disciplina dell'immigrazione e la condizione dello straniero.
Al di fuori dei casi sopradetti, i cittadini di Stati non appartenenti all'Unione autorizzati a soggiornare nel territorio dello Stato possono utilizzare le dichiarazioni sostitutive nei casi in cui la produzione delle stesse avvenga in applicazione di convenzioni internazionali fra l'Italia e il Paese di provenienza del dichiarante.

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Dr. Om Prakash Bajpai
Postdoc Researcher,
University of Trento, Trento-38123, Italy

Career Objective: Highly motivated researcher with robust research experience in materials and electrochemistry from reputed academic research institutes. Capable of working independently and as a part of team in diverse/multicultural environments. Skilled in managing international research projects. Enthusiastic to perform application-oriented research and translating academic learnings into real industrial product development. Interested to lead a scientific research position which offers an elaborate knowledge of materials chemistry/electrochemistry towards renewable energy storage applications.

Current Affiliation: Working as Postdoc Researcher in IdEA (Hydrogen, Energy, Environment) Group, Department of Physics, University of Trento, Italy. **Jan 2022-Present**

Education

- Doctor of Philosophy (Ph.D.) in Materials Science, July, 2018
  Indian Institute of Technology (IIT) Kharagpur, India.

- Master of Technology (M. Tech.) in Polymer Chemistry & Rubber Technology, July, 2012
  Indian Institute of Technology (IIT) Kharagpur, India. (CGPA: 8.44)

- Master of Science (M. Sc.) in Organic Chemistry, July, 2008
  Chhatrapati Shahu Ji Maharaj (CSJM) University, Kanpur, India. (Percentage: 61.80%)

Research Interest:

Developing materials for renewable energy storage applications. Specifically emphasizing on segments like Electrochemistry, Nanomaterials, Hydrogen Evolution Reaction (HER), Electrocatalyst, Photoactive Electrodes, Porous Carbon Electrode Modifications, Solar-Photocatalysis, Polymer Chemistry.

Skills:

- Synthesis of diverse semiconducting materials like graphitic carbon nitride (g-C_3N_4), reduced graphene oxide (RGO), transition metal oxides, and conducting polymers (i.e., polythiophene, polyaniline etc.).
- Thin film formation via *in-situ* synthesis, electrodeposition, electrophoretic deposition, pulse laser deposition (PLD), physical vapor deposition (PVD), dip coating and spin coating techniques.
- Modification of porous carbon electrodes (like carbon cloth, graphitic felt, carbon felt etc), and preparation of photoactive electrodes (FTO/Sn-doped FeOx/g-C_3N_4) via layered thin film formation towards hydrogen evolution (HER) and redox flow battery (RFBs) applications.
- Preparing Z-scheme thin films using transition metal oxides, graphitic semiconducting materials and polymers towards renewable energy storage and solar photocatalysis applications. Preparing photoactive devices (ITO/EPT/P_3HT:$PC_{61}BM$/Al) using electrochemically synthesized polythiophene thin film as hole transporting layer (HTL) and P_3HT:$PC_{61}BM$ fullerenes as active layers.
- Synthesis and functionalization of nanomaterials like Fe_2O_3, Fe_3O_4, $BiFeO_3$ etc. using different methods like hydrothermal, sol-gel, electrodeposition, pulse laser deposition (PLD) etc.
- Analysis of materials for solar photocatalysis using solar simulator as well as under concentrated solar light i.e., solar concentrators, and fabrication of photovoltaic devices.
- Independently handling multi-national research projects, frequently traveling abroad for performing experiments, research meets, and documenting research reports.
- Experience of handling various sophisticated instruments and characterization techniques such as Metrohm Auto Lab, Gamry potentiostat/galvanostat/ZRA, Solar simulators, Two axis solar concentrators, Cyclic voltammetry (CV), Linear sweep voltammetry (LSV), Electrochemical impedance spectroscopy (EIS), Double layer capacitance (C_{DL}), Pulse laser deposition (PLD), Profilometry, Ellipsometry, Rheometry, Optical Microscope, FT-IR, SEM, TEM, XRD, DSC, TGA, XPS, AFM, MFM, UV-Vis Spectrophotometers, Raman, etc.

➢ Research Experience:

- **Jan 2022 - Present**: (Postdoc Work)
  Working in European Union (EU) multinational research project Waste2Fresh (https://waste2fresh.eu/). Waste2Fresh is an industrial project funded by EU horizon 2020 in which 17 different institutes from various countries are involved. The project was aimed to develop and demonstrate the possible closed loop recycling system to produce clean water from the real dye waste water of the textile ERAK denim factory at Turkey. Subsequently, produce renewable energy from photovoltaics to fullfil the requirement of electricity at the ERAK. Here, I am involved in designing and setting up of solar energy unit and solar concentrator units at industrial scale for renewable energy generation and photocatalyst development.

- **July 2012 - July 2018**: (Doctoral Thesis Work)
  I had worked on structured polythiophene and graphene based bismuth ferrite nanohybrid for photovoltaic and photocatalytic applications. I have worked on electrochemical synthesis of polymers and synthesis of transition metal oxides as well as fabrication of photovoltaic devices using electrochemically synthesized polythiophene as a hole transporting layer (HTL) and analysing photocatalytic materials. Also learnt different electrochemical characterization techniques.

- **May 2011 - April 2012**: (Master Thesis Work)
  Worked for one year at Defence Materials and Stores Research and Development Establishment (DMSRDE), Kanpur, a laboratory of the Indian Defence Research and Development Organization (DRDO). In this project I had worked on developing magneto-electric materials for sensing applications.

➢ Teaching Experience and Visiting Research

- **July 2018 - Sep 2019:**
  Worked as an assistant professor (chemistry) in School of Engineering and Technology (SOET), Sandip University, Nashik, India. Where I was teaching NMR Spectroscopy, Analytical Chemistry, Applied Chemistry to UG/PG students, and guided multiple master research thesis. Also participated in organising Indo-US workshops and International conference.

- **Nov 2019 - Jan 2020:**
  Worked as '*Visiting Fellow*' in Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru, India. Here I was working on developing thin films of porous ferroelectric polymers for sensing applications.

➢ Supervision of Research Thesis

- I had supervised four master (M.Sc.) students research thesis/dissertations.

  During Postdoc Tenure: 02,
  1. Title: Photoactive FeOx/g-C_3N_4 electrodic material for solar hydrogen production **(2024)**
  2. Title: g-C_3N_4: Functional electrodes for energy storage application **(2023)**

  During Teaching Tenure (Assistant professor):02
  1. Title: Development of a polymer membrane based optical test strip for quantitative assay of mercury ions in aqueous medium **(2019)**
  2. Title: Investigation on the mechanism of formation of Ni-Ag bimetallic nanoparticles in polymer membrane by galvanic replacement route **(2019)**

➢ Achievements and Awards

- Awarded Postdoc Research Fellowship (2022-2023) by University of Trento, Italy.
- Awarded Visiting Research Fellowship (2019-2020) by Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), a premier research institute of India.
- Awarded Institute Senior Research Fellowship (2016-2017) by IIT Kharagpur, India.
- Qualified National Eligibility Test (NET-JRF, Dec 2009) in Chemical Sciences conducted by Council of Scientific and Industrial Research (CSIR), New Delhi, India. (All India Rank-268)

- Qualified Graduate Aptitude Test in Engineering (GATE-2010) in Chemistry conducted jointly by the Indian Institute of Science (IISc) and seven Indian Institutes of Technologies (IITs) of India.
- Received 2nd prize in poster presentation in International Conference *(ICEMELTS-2018),* Sandip University, Nashik, India.

➢ **List of Publications**

- **O.P. Bajpai,** Michele Orlandi, Antonio Miotello. 'Effect of g-C_3N_4 modification on carbon cloth electrodes to improve electrocatalytic activity towards energy storage applications **(2024)**. *(work in progress)*
- **O.P. Bajpai,** Michele Orlandi, Antonio Miotello. 'Electrophoretically deposited graphitic carbon nitride (g-C_3N_4) over Sn doped FeOx to develop efficient electrodic material for solar hydrogen production **(2024)**. *(Manuscript under preparation)*
- **O.P. Bajpai,** Zakaria El Koura, Michele Orlandi, Antonio Miotello.' Graphitic Carbon Nitride (g-C_3N_4) Modified Carbon Electrodes for Electrochemical Energy Storage Systems' *Journal of the Electrochemical Society 170 (11), 116507,* **(2023)** *(Impact Factor- 4.3).*
- **O. P. Bajpai**, S. Kumar, S Bhandari, A. Dhar, D. Khastgir, S. Chattopadhyay. 'Electrolyte and Current Density Determines the Fate of Electrodeposited Polythiophene from Waveguide to Photovoltaics', *Solar Energy Materials and Solar Cells* 183, 107-119, *ISSN: 0927-0248* (*Impact Factor- 7.20*).
- Murilo Fendrich, ***O. P. Bajpai**, Raju Edla, Alessandra Molinari, Paola Ragonese, Chiara Maurizio, Michele Orlandi, Antonio Miotello. 'Towards the Development of a Z-Scheme FeOx/g-C_3N_4 Thin Film and Perspectives for Ciprofloxacin Visible Light-Driven Photocatalytic Degradation' *Applied Sciences* 13(19), 10591, **(2023)**. (***equally contributed with First Author***)
- Linda Maria Varghese, **O. P. Bajpai**, Dhanya K R, Sanal Sebastian Payyappilly. 'Electrodeposited Polythiophene Nanocomposites and Their Applications' *Apple Academic Press, USA,* **(2024),** *ISBN: 9781003412748,* p. 372 (Book Chapter).
- Nicola Bazzanella, **O. P. Bajpai**, Murilo Fendrich, Graziano Guella, Antonio Miotello, Michele Orlandi. 'Ciprofloxacin degradation with a defective TiO_{2-x} nanomaterial under sunlight' *MRS Communications,* 13 (6), 1252-1259, **(2023)**.
- Asma El Golli, Davide Losa, Claudio Gioia, Murilo Fendrich, **O.P. Bajpai**, Olivier Jousson, Michele Orlandi, Antonio Miotello. 'Parabolic trough concentrator design, characterization, and application: solar wastewater purification targeting textile industry dyes and pharmaceuticals. Technoeconomic study'*Journal of Environmental science: water research & technology,* **(2024)**. *(In Review)*
- Asma El Golli,a Murilo Fendrich, **O.P. Bajpai**, Marco Bettonte, Serpil Edebali, Michele Orlandi, Antonio Miotello. 'Parabolic trough concentrator design, characterization, and application: solar wastewater purification targeting textile industry dyes and pharmaceuticals. Technoeconomic study' *Euro-Mediterranean Journal for Environmental Integration,* **(2024)**.*https://doi.org/10.1007/s41207-024-00531-1*
- P. Mandal, S. Maji, S. Panja, **O. P. Bajpai,** T. K. Maiti and S. Chattopadhyay, 'Magnetic Particle Ornamented Dual Stimuli Responsive Nanogel for Controlled Anticancer Drug Delivery', *New Journal of Chemistry* 43, 3026-3037 **(2019),** *ISSN:* 11440546.
- **O. P. Bajpai**, S. Mandal, R. Ananthakrishnan, D. Khastgir, S. Chattopadhyay, 'Structural Features, Magnetic Properties, and Photocatalytic Activity of Graphene Grafted Bismuth Ferrite Nanoparticles', *New Journal of Chemistry* 42, 10712-10723 **(2018),** *ISSN:* 11440546.
- A Dey, **O. P. Bajpai**, AK Sikder, S Chattopadhyay, MAS Khan, 'Recent advances in CNT/graphene based thermoelectric polymer nanocomposite: A proficient move towards waste energy harvesting', *Renewable & Sustainable Energy Reviews* 53, 653-671 **(2016),** *ISSN: 1364-0321* (*Impact Factor- 16.80*).
- **O. P. Bajpai**, S. Panja, D. K. Setua, S. Chattopadhyay, 'Process-structure-property relationships in nanocomposites based on piezoelectric-polymer matrix and magnetic nanoparticles', *Manufacturing of Nanocomposites with Engineering Plastics*, by Vikas Mittal (Ed)., Woodhead Publishing Co., Elsevier, USA, p. 255 **(2015),** *ISBN: 9781782423089* (Book Chapter).

- **O. P. Bajpai**, D. K. Setua, S. Chattopadhyay, 'A Brief Overview on Ferrite (Fe_3O_4) Based Polymeric Nanocomposites Recent Developments and Challenge', *Journal of Research Updates in Polymer Science* 3, 184-204 **(2015),** *ISSN: 1929-5995.*
- **O. P. Bajpai**, J. B. Kamdi, M. Selvakumar, S. Ram, D. Khastgir, S. Chattopadhyay, 'Effect of surface modification of $BiFeO_3$ on the dielectric, ferroelectric, magneto-dielectric properties of polyvinylacetate/$BiFeO_3$ nanocomposites', *Express Polymer Letters* 8 (9), 669-681 **(2014),** *ISSN: 1778-618X.*

➢ **Conferences/Workshops**

• Om Prakash Bajpai, European Union's Horizon 2020 Research and Innovation Programme sponsored Waste2Fresh Consortium Meet at Open University, United Kingdom (UK), 19-20 Jan 2023.
• Om Prakash Bajpai, EU Waste2Fresh Consortium Meet on Industrial Waste Water Pollution, Istanbul, (Turkey), 12-13 May 2022.
• Om Prakash Bajpai, 'Two Days Indo-US workshop on Hazardous Materials Management, Sandip University, Nashik, (India) 14-15 Nov (2018).
• Om Prakash Bajpai, International Conference on Emerging Trends in Management, Engineering, Law, Technology and Science (ICEMELTS), Sandip University, Nashik, (India) 3-5 Dec (2018).
• Om Prakash Bajpai, International Conference on Innovation in Polymer Science and Technology (IPST), Medan, (Indonesia), Nov 7-10, (2016).
• Om Prakash Bajpai, International Conference on Rubber and Rubber-like materials (ICRRM), IIT Kharagpur, Kharagpur, (India), March 6-9, (2013).

➢ **Other Relevant Information:**

Language known: Hindi (Native), English (Fluent C2), Italian (Initial level-A1)
Date of Birth: 2nd April 1987,
Nationality: Indian
UNITN Profile: https://www.physics.unitn.it/en/104/idea-hydrogen-energy-environment
Linkedin Profile: https://www.linkedin.com/in/dr-om-prakash-bajpai-05614455/
Google Scholar: https://scholar.google.com/citations?user=saQvAqUAAAAJ&hl=en

References:

1. Prof. Antonio Miotello, (Group Head, Postdoc group)
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2. Prof. Michele Orlandi, (Associate Professor, Postdoc group)
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