TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO **ID CODE ___6717_____**

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di _____Chemical Sciences_____**

Scientist- in – charge: **___Dr. Ivan Grigioni_____**

[Suparna Das]

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Das
Name	Suparna

PRESENT OCCUPATION

Appointment	Structure
Research Associate	Indian Association for the Cultivation of Science, India

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	PhD	University of Calcutta	2017
Specialization	Polymers, electrochemistry		
PhD	Engineering (Polymer Science and Technology)	University of Calcutta	2017
Master	Master of Science in Chemistry	West Bengal State University	2012
Degree of medical specialization			
Degree of European specialization			
Other			

REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City

FOREIGN LANGUAGES

Languages	level of knowledge
English	Professional level
Hindi	Basic level
Bengali	Basic level

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2019	Nehru-Fulbright postdoctoral fellowship, Funding Agency: United States-India Educational Foundation (USIEF)
2019	PBC scholarship program for outstanding post-doctoral students, Funding agency: Israel council for higher education
2017	National postdoctoral fellowship, Funding Agency: Department of Science and Technology- Science & Engineering Research Board (DST-SERB), India.
2017	Received Best Paper award at the conference "ICONEST", Indian Institute of Science, Bangalore, India

TRAINING OR RESEARCH ACTIVITY

description of activity
Development of sulfonated polymer based proton exchange membranes and catalyst supports for applications in direct methanol fuel cells. • Various proton exchange membranes, based on Nafion, polyvinylidene fluoride, poly(vinylidene fluoride-co-hexafluoro propylene), sulfonated polyvinylidene fluoride were synthesized, characterized and analyzed for their potential utilization in direct methanol fuel cells. • Catalyst supporting matrices, based on carbon black, polyaniline, sulfonated polyaniline, polypyrrole, and sulfonated polypyrrole were fabricated, characterized and analyzed for their potential application in direct methanol fuel cells.
Utilization of nanostructured conducting polymer based cathode catalyst and polymeric electrolyte membrane to develop low cost microbial fuel cells. • Synthesis of nanostructured (nano fibres, nano whiskers) conducting polymers (Polyaniline, Polypyrrole, Polythiophene, Poly(3,4-ethylenedioxythiophene etc.). • Isolation of different electrogenic microorganisms from environment, efficient in power production in Microbial Fuel Cells. • Utilization of the developed catalysts and membranes in microbial fuel cells.

PROJECT ACTIVITY

Year	Project
2023-2024	Synthesis of two dimensional materials for supercapacitor application.
2020-2022	Utilization of Graphene Quantum Dots for Improved Electrocatalytic Activity for Both the Alcohol Oxidation and Oxygen Reduction Reaction in PEMFCs.
2019	Development of chalcogenides and its application for Oxygen Reduction Reaction in PEMFCs.
2017-2019	Utilization of nanostructured conducting polymer based cathode catalyst and polymeric electrolyte membrane to develop low cost microbial fuel cells.
2013-2015	Development of low cost membrane electrode assembly for application in PEMFC.

PATENTS

Patent

CONGRESSES AND SEMINARS

Date	**Title**	**Site**
6.12.2017-8.12.2017	Nanostructured polyaniline matrices as efficient and durable catalyst support for methanol oxidation in acid medium	Indian Institute of Technology, Roorkee, India, Occasion: ICN:3I-2017
10.08.2017-12.08.2017	Utilization of cerium oxide nanocatalyst for the enhancement of oxygen reduction reaction in acid medium	Indian Institute of Science, Bangalore, India, Occasion: ICONEST
27.08.2014-29.08.2014	Introduction of Al_2O_3 into Pt-Ru/C for the preparation of efficient low cost anode catalyst: A preliminary study for the application in Direct Methanol Fuel Cell	University of Calcutta, Kolkata, India, Occasion: Condensed Matter Days

PUBLICATIONS

Books
Das, S.; Dutta, K.; Nessim, G. D.; Kader Introduction to direct methanol fuel cells Direct Methanol Fuel Cell Technology, 2020, Israel, Publisher: Elsevier, Page 1-12, DOI: 10.1016/B978-0-12-819158-3.00001-X.
Das, S.; Dutta, K.*; Bhattacharya, S. K.; Kundu, P. P.* "Polymer electrolyte membranes for Microbial Fuel Cells: Part B. Non-nafion alternative membranes" in Progress and Recent Trends in Microbial Fuel Cells, Editors: Patit P. Kundu and Kingshuk Dutta, 2017, India, DOI: 10.1016/B978-0-444-64017-8.00005-1.

Articles in magazines
Das. P.; Mondal. T. K.; Bera. S.; Das. S.; Hsu. H.-L.; Su. Y.-K.; Saha. S. K.* Facile in-situ growth of spore-like silica on layered MXene sheets for potential application in Supercapacitor, Electrochimica Acta 2023, 465, 142983.
Murphy. E.; Liu. Y.; Matanovic. I.; Guo. S.; Tieu. P.; Huang. Y.; Ly. A.; Das. S.; Zenyuk. I.; Pan. X.; Spoerke. E.; Atanassov. P.* Highly Durable and Selective Fe- and Mo-Based Atomically Dispersed Electrocatalysts for Nitrate Reduction to Ammonia via Distinct and Synergized NO_2 Pathways, ACS Catalysis 2022, 12, 6651-6662.
Papiya, F.; Pattanayak, P.; Kumar, V.; Das, S.; Kundu, P.P.* Sulfonated graphene oxide and titanium dioxide coated with nanostructured polyaniline nanocomposites as an efficient cathode catalyst in microbial fuel cells, Materials Science and Engineering: C 2020, 108, 110498.
Das, S.; Chatterjee, S.; Mondal, S.; Modak, A.; Chandra, B. K.; Das, S.; Nessim, G. D.; Majee, A.; Bhaumik, A. Thiadiazole containing N-and S-rich highly ordered periodic mesoporous organosilica for efficient removal of Hg (II) from polluted water, Chemical Communications 2020, 56, 3963-3966.
Das, S. *; Dutta, K.; Banik, S.; Papiya, F.; Kundu, P.P.; Bhattacharya, S.K.* Nanorods of cerium oxide as an improved electrocatalyst for enhanced oxygen reduction in single chambered microbial biofuel cells. Materials Research Express 2020, 7, 015514.
Papiya, F.; Das, S.; Pattanayak, P.; Kundu, P.P.*; The fabrication of silane modified graphene oxide supported Ni Co bimetallic electrocatalysts: a catalytic system for superior oxygen reduction in microbial fuel cells. International Journal of Hydrogen Energy 2019, 44, 25874-25893.
Das, S.; Dutta, K.*; Kundu, P.P.*; Bhattacharya, S.K.* Nanostructured polyaniline: An efficient support matrix for platinum-ruthenium anode catalyst in direct methanol fuel cell. Fuel Cells 2018, 18, 369-378.
Das, S.; Dutta, K.; Kundu, P. P.* Sulfonated polypyrrole matrix induced enhanced efficiency of Ni nanocatalyst for application as an anode material for DMFCs Mater. Chem. Phys. 2016, 176, 143-151.
Dutta, K.; Das, S.; Kundu, P. P.* Polyaniline nanowhiskers induced low methanol permeability and high membrane selectivity in partially sulfonated PVdF-co-HFP membranes RSC Adv. 2016, 6, 107960-107969.
Dutta, K.; Das, S.; Kundu, P. P.* Effect of the presence of partially sulfonated polyaniline on the proton and methanol transport behavior of partially sulfonated PVdF membrane Polym. Journal 2016, 48, 301.
Dutta, K.; Das, S.; Kundu, P. P.* Highly methanol resistant and selective ternary blend membrane composed of sulfonated PVdF co HFP, sulfonated polyaniline and nafion J. Appl. Polym. Sci. 2016, 133, 43294.
Dutta, K.; Das, S.; Kundu, P.P. Partially Sulfonated Polyaniline Induced High Ion Exchange Capacity and Selectivity of Nafion Membrane for Application in Direct Methanol Fuel Cells. J. Membr. Sci. 2015, 473, 94-101.
Kumar, V.; Nandy, A.; Das, S.; Salahuddin, M.; Kundu, P.P. Performance assessment of partially sulfonated PVdF-co-HFP as polymer electrolyte membranes in single chambered microbial fuel cells. Appl. Energy 2015, 137, 310-321.
Das, S.; Dutta, K.; Shul, Y. G.; Kundu, P. P.* Progress in Developments of Inorganic Nanocatalysts for Application in Direct Methanol Fuel Cells. Critical Reviews in Solid State and Materials Sciences 2015, 40, 316-357.
Das, S.; Dutta, K.; Hazra, S.; Kundu, P. P.* Partially sulfonated poly(vinylidine fluoride) induced enhancements of properties and DMFC performance of Nafion electrolyte membrane. Fuel Cells, 2015, 15, 505-515.

Das, S.; Dutta, K.; Kundu, P. P.* Nickel nanocatalyst supported on sulfonated polyaniline: Potentials toward methanol oxidation and as anode materials of DMFCs. J. Mater. Chem. A 2015, 3, 11349-11357.
Das, S.; Kundu, P. P.* Pt Ru/Al_2O_3 C nanocomposites as direct methanol fuel cell catalysts for electrooxidation of methanol in acidic medium. RSC Adv. 2015, 5, 93535-93546.
Kumar, P.; Dutta, K.; Das, S.; Kundu, P. P.* Membrane Prepared by Incorporation of Crosslinked Sulfonated Polystyrene in the Blend of PVdF-co-HFP/Nafion: A Preliminary Evaluation for Application in DMFC. Appl. Energy 2014, 123, 66-74.
Dutta, K.*; Das, S.; Kundu, P. P.* Synthesis, Preparation and Performance of Blends and Composites of π–Conjugated Polymers and their Copolymers in DMFCs. Polym. Rev. 2015, 55, 630-677.
Dutta, K.; Das, S.; Kundu, P.P. Low methanol permeable and highly selective membranes composed of pure and/or partially sulfonated PVdF-co-HFP and polyaniline. J. Mem. Sci. 2014, 468; 42-51.
Dutta, K.; Das, S.; Kundu, P.P. Epoxidized Esters of Palm Kernel Oil as an Effective Plasticizer for PVC: A Study of Mechanical Properties and Effect of Processing Conditions. Int. Polym. Proc. 2014, 29; 495-506.
Das, S.; Kumar, P.; Dutta, K.; Kundu, P.P. Partial Sulfonation of PVdF-co-HFP: A preliminary study and characterization for application in direct methanol fuel cell. Appl. Energy 2014, 113, 169-177.
Dutta, K.; Kumar, P.; Das, S.; Kundu, P. P.* Utilization of Conducting Polymers in Fabricating Polymer Electrolyte Membranes for Application in Direct Methanol Fuel Cells. Polym. Rev. 2014, 54, 1-32.
Dutta, K.; Kumar, P.; Das, S.; Kundu, P. P.* Effects of various factors on the interfacial mass transfer phenomenon and dispersion of polyaniline in an aqueous/organic bi-/tri-phase system. Colloids and Surfaces A: Physicochemical and Engineering Aspects. 2013, 436, 830-838.
Kumar, P.; Dutta, K.; Das, S.; Kundu, P. P.* An Overview of Unsolved Deficiencies of Direct Methanol Fuel Cell Technology: Factors and Parameters Affecting its Widespread Use. Int. J. Energy Res. 2014, 38, 1367-1390.
Dutta, K.; Das, S.; Kumar, P.; Kundu, P. P.* Polymer Electrolyte Membrane with High Selectivity Ratio for Direct Methanol Fuel Cells: A Preliminary Study Based on Blends of Partially Sulfonated Polymers Polyaniline and PVdF-co-HFP. Appl. Energy 2014, 118, 183-191.

Congress proceedings
Das, S.; Dutta, K.; Kundu, P. P.* Electrocatalytic potential of sulfonated polypyrrole supported Ni-Ag towards methanol oxidation in acidic medium. IEEE Xplore, 2016, DOI: 10.1109/ICTFCEN.2016.8052738. (Publisher: IEEE)

OTHER INFORMATION

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

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