

ANUJA RAJPUROHIT

B/B-03 GANGAMAI CHS
SAKHARAM COMPLEX DOMBIVLI (WEST)

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CAREER OBJECTIVE

Ph.D. graduate with research background in electrochemistry for the sensing of active pharmaceutical ingredients and fabrication of energy storage materials. Seeking to build a strong position as a Chemist in an esteemed organization to utilize the skills in research, development, testing and analytics.

EDUCATION

2016-PRESENT

Ph.D. (Thesis submitted), DEPARTMENT OF CHEMISTRY, UNIVERSITY OF MUMBAI.

Supervised by: Prof. A. K. Srivastava

Thesis title: "Development of Electrochemical Sensors and Supercapacitors based on synthesized Nanocomposite Materials."

2013-2015

M.Sc. (Physical Chemistry), THE INSTITUTE OF SCIENCE, MUMBAI.

CGPA: 6.31/7.0; GRADE: A (FIRST CLASS)

2010-2013

B.Sc. (Chemistry), K.E.T.'S V. G. VAZE COLLEGE OF ARTS SCIENCE AND COMMERCE, MULUND, MUMBAI.

PERCENTAGE: 65.00%; FIRST CLASS

2008-2010

H.S.C., MAHARASHTRA STATE BOARD

PERCENTAGE: 69.00%; FIRST CLASS

2008

S.S.C., MAHARASHTRA STATE BOARD

PERCENTAGE: 77.07%; FIRST CLASS

EXPERIENCE

JUNE 2016 – APRIL 2019

RESEARCH EXPERIENCE:

During the research period, I have synthesized various nanomaterials and nanocomposites utilizing different carbon-based materials, metal and/or metal oxide nanoparticles, metal organic frameworks and/or conducting polymers by different chemical routes. These materials were compounded with others to form the nanocomposites. The formation of nanomaterials and nanocomposites has been ensured by several surface and structural characterization techniques and as-prepared nanocomposites have been used to fabricate chemically modified electrodes. The developed modified electrodes were explored for two-fold applications: (a) electrochemical sensing of various active pharmaceutical compounds and biomolecules and (b) electrode materials for fabrication of high-performance supercapacitors. The developed electrochemical sensors were successfully applied for the quantitative determination of studied drugs in synthetic pharmaceutical formulations and human body fluids (blood serum and urine). Whilst, the fabricated supercapacitors exhibited high performance with excellent deliverables and bestowed advancement of energy storage devices.

INSTRUMENTS HANDLED:

- Electrochemical work station, Autolab PGSTAT 302 (NOVA version 1.11)
- Electrochemical work station, Autolab PGSTAT 30 (GPES version 2.0)
- User of XRD, FT-IR and TGA for almost 2 years
- Sound theoretical knowledge of chromatographic separation techniques such as HPLC, GC, hyphenated techniques, etc.
- Knowledge of other characterization techniques such as Raman, SEM, TEM, EDS, BET surface area and pore dimension analysis and XPS.

SKILLS

- **Analysis & Problem Solving:**
 - Define a problem and identify possible causes
 - Comprehend large amounts of information
 - Form and defend independent conclusions
 - Design an experiment, plan, or model that defines a problem, tests potential resolutions and implements a solution

- **Interpersonal & Leadership Skills:**

- Facilitate group discussions and conduct meetings
- Respond appropriately to positive or negative feedback
- Teach skills or concepts to others

- **Research & Information Management:**

- Identify sources of information applicable to a given problem
- Understand and synthesize large quantities of data
- Design and analyze surveys
- Develop organizing principles to effectively sort and evaluate data

- **Laboratory & Technical Skills:**

- Synthesis of nanomaterials and nanocomposites following various chemical methods
- Characterization of nanomaterials and elucidation of data by various techniques
- Electrochemical analysis employing different voltammetric, chrono-techniques and impedance spectroscopy
- Basic Computer Skills: OS-Windows, MS-Office and Data interpretation softwares viz. Origin, ChemDraw and scientific databases viz. SciFinder, Scopus, Medline, Mendeley and Web of Science

- **Written & Oral Communication:**

- Prepare concise and logically-written materials
- Organize and communicate ideas effectively in oral presentations to small and large groups
- Write at all levels - brief abstract to book-length manuscript
- Write effective grant proposals
- Debate issues in a collegial manner and participate in group discussions

HONOURS

- Awarded DST-PURSE Fellowship sponsored by Department of Science and Technology, India for Ph.D. research scholars during the period from September 2016 to April 2019.
- Stood second during M.Sc. in Physical Chemistry at The Institute of Science, Mumbai.

ACTIVITIES

- **RESEARCH PUBLICATIONS:**

1. **A. S. Rajpurohit**, N. S. Punde and A. K. Srivastava, A dual metal organic framework based on copper-iron clusters integrated sulphur doped graphene as a porous material for supercapacitor with remarkable performance characteristics, *Journal of Colloid and Interface Science*, 2019, 553, 328-340. **Impact Factor: 6.361**

2. **A. S. Rajpurohit**, N. S. Punde, C. R. Rawool and A. K. Srivastava, Fabrication of high energy density symmetric supercapacitor based on cobalt-nickel bimetallic tungstate nanoparticles decorated phosphorus-sulphur co-doped graphene nanosheets with extended voltage, *Chemical Engineering Journal*, 2019, 371, 679-692. **Impact Factor: 8.355**
3. **A. S. Rajpurohit** and A. K. Srivastava, Simultaneous electrochemical sensing of three prevalent anti-allergic drugs utilizing nanostructured manganese hexacyanoferrate/chitosan modified screen printed electrode, *Sensors and Actuators B*, 2019, 294, 231-244. **Impact Factor: 6.393**
4. **A. S. Rajpurohit**, D. K. Bora and A. K. Srivastava, Simultaneous determination of amlodipine and losartan using an iron metal-organic framework/ mesoporous carbon nanocomposite-modified glassy carbon electrode by differential pulse voltammetry, *Analytical Methods*, 2018, 10, 5423-5438. **Impact Factor: 2.378**
5. **A. S. Rajpurohit**, N. S. Punde, C. R. Rawool and A. K. Srivastava, Application of carbon paste electrode modified with carbon nanofibres/polyaniline/platinum nanoparticles as an electrochemical sensor for the determination of bezafibrate, *Electroanalysis*, 2018, 30, 571-582. **Impact Factor: 2.851**
6. N. S. Punde, **A. S. Rajpurohit** and A. K. Srivastava, Fabrication of an advanced symmetric supercapattery based on nanostructured Bismuth-Cobalt-Zinc ternary oxide anchored on silicon carbide hybrid composite electrode, *Energy Technology*, 2019 1900387, 1-12. **Impact Factor: 3.175**
7. C. R. Rawool, **A. S. Rajpurohit**, N. S. Punde and A. K. Srivastava, Adsorptive stripping voltammetric determination of dicyclomine hydrochloride at a glassy carbon electrode modified with silver decorated Fe₃O₄ nanocubes in pharmaceutical and biological samples, *Analytical Methods*, 2018, 10, 1441-1451. **Impact Factor: 2.378**
8. N. S. Punde, C. R. Rawool, **A. S. Rajpurohit**, S. P. Karna and A. K. Srivastava, Hybrid composite based on porous cobalt-benzene tricarboxylic acid metal organic framework and graphene nanosheets as high performance supercapacitor electrode, *ChemistrySelect*, 2018, 3, 11368-11380. **Impact Factor: 1.505**
9. C. R. Rawool, N. S. Punde, **A. S. Rajpurohit**, S. P. Karna and A. K. Srivastava, High energy density supercapacitive material based on a ternary hybrid nanocomposite of cobalt hexacyanoferrate/carbon nanofibers/polypyrrole, *Electrochimica Acta*, 2018, 268, 411-423. **Impact Factor: 5.383**
10. A. K. Srivastava, S. S. Upadhyay, C. R. Rawool, N. S. Punde and **A. S. Rajpurohit**, Voltammetric Techniques for the Analysis of Drugs using Nanomaterials based Chemically Modified Electrodes, *Current Analytical Chemistry*, 2019, 15, 249-276. **Impact Factor: 1.000**

- **CONFERENCES/SYMPOSIA:**

1. Presented my Ph.D. research work entitled “Development of electrochemical sensors and supercapacitors based on synthesized nanocomposite materials.” in “31st Research Scholars’ Meet RSM-2019” at UM-DAE Centre for Excellence in Basic Sciences, University of Mumbai, India, held on 8-9 February, 2019 (**Oral presentation**).
2. Presented one of my Ph.D. works entitled “Development of an electrochemical sensor for Bezafibrate using carbon paste electrode modified with carbon nanofibers/polyaniline/platinum nanoparticles”, in “National Conference on Recent Developments in Chemical Sciences” at Department of Chemistry, University of Mumbai, India, held on 8-9 March, 2018 (**Poster presentation**).
3. Attended the conference on recent trends in nanomaterials for various applications in “Nano Express 2019” at National centre for Nanoscience and Nanotechnology, University of Mumbai, India, held on 15-16 March, 2019.
4. Attended 8th Indian Youth Science Congress, at University of Mumbai held in February, 2017.

PERSONAL DETAILS:

- Gender : Female
- Date of Birth : 6th March, 1993
- Nationality : Indian
- Languages known : English, Marathi, Hindi& Kannada (Able to speak)
- Passport : Yes

REFERENCES:

- 1. Mr. S. G. Rajpurohit**
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- 2. Dr. A. K. Srivastava**
Professor in Analytical Chemistry
Department of Chemistry
University of Mumbai
Mumbai – 400098
E-mail: aksrivastava@chem.mu.ac.in

I hereby declare that the above mentioned information provided by me is correct and true as per my knowledge.

Place: Mumbai

Anuja S. Rajpurohit.