Ndeye Fatou Sylla, Ph. D

Reitbahnstrasse 35, 01069 Dresden, Germany | (+49) 15217838908 | ntoufasylla@gmail.com|
linkedin.com/in/ndeye-fatou-sylla-a48695144| https://orcid.org/0000-0002-1867-8149, |

AREAS OF EXPERTISE

Research and Development (R&D) | RAMAN & FTIR | Nanoelectronics | Gas-sorption analyses | Electrochemistry | Presentation Skills | Data Analysis and Interpretation | Microsoft Office PACKAGE | Thermal analysis | Advanced materials characterization software | Morphological and structural analysis | Written communication | Communication skills | Hands-on materials sample preparation | Complex problem-solving skills |

PERSONAL INTERSTS

Innovative Research and Development (R&D) | Maintenance | Project management | Renewable Energy | Hybrid materials modeling, Syntheses and Characterization | Safety plans | Supercapacitors | Lithium-ion batteries | Lithium-Sulfur batteries | Sodium-ions batteries | Data Analysis

EDUCATION

Ph. D in Physics/ Materials Science, University of Pretoria, Pretoria, South Africa **2017-2020**

MSc in Physics and Applications, University Cheikh Anta Diop, Dakar, Senegal **2010-2014**

BSc in Physics and Applications, University Cheikh anta Diop, Dakar, Senegal **2008-2009**

RELEVANT EXPERIENCE

Alexander von Humboldt Post-doctoral Research Fellow, **06/2022-06/2024**
Inorganic Chemistry department, Dresden University of Technology, Dresden, Germany

University of Pretoria Post-doctoral Research Fellow, **03/2021-04/2022**

Physics Department, University of Pretoria, Pretoria, South Africa

Laboratory Technician **2020-2022**
Physics Department, University of Pretoria, Pretoria, South Africa

Assistant Lecturer PHY 263 **2018-2022**
Physics Department, University of Pretoria, Pretoria, South Africa

Lecturer at basics informatics **2014-2016**
Department of Ministry of Higher Education and Research "Centre De Recherche et d'Essais", Saint-Louis, Senegal

SUPERVISING EXPERIENCE

- Research laboratory Master class supervising of MSc. Florian Mückan **(1st semester 2023/2024)** Entitled: "Microporous carbon derived from biomass waste as cathode for Li-Sulfur Battery"
- Master project supervising on "Advanced Functional Materials" entitled: "Influence of carbon porosity and electrolyte composition on the electrochemical performance of Lithium-Sulfur battery", **Svea Schlag** & **Florian Mückan** Inorganic Chemistry department, Dresden University of Technology, Dresden, Germany, **(Summer 2023)**
- Undergraduate students supervising, Physics Department, University of Pretoria, Pretoria, South Africa, (**2018-2019**)

CERTIFICATIONS AND TRAINING

- 9th, 10th, Workshop "Lithium-Sulfur Batteries" 28 - 29 July 2022, 3 - 4 July 2023, Fraunhofer IWS, Dresden, Germany
- MXene Course, 7 - 11 February 2022 | Laboratory Safety Training
- East Africa-Microscopy 2021 Workshop "Raman & XRD spectroscopy" 24 - 27 May 2021.
- Virtual Microscopy Society of Southern Africa (MSSA) Workshop 2020, 30th Nov - 3rd Dec 2020
- 1st International Spring School of Electrochemistry (ISSE 2019) "Smart Materials for and from +Electrochemistry" Castellammare del Golfo (TP), Italy, 19 – 23 May 2019.
- International Workshop on Porous Materials and their Application (IWPMA-2018) CSIR, South Africa, 13-14 September 2018
- International Workshop on Supercapacitors and Energy Storage, Salerno, Italy, 31 May -1 June 2018

AWARDS AND SPECIAL RECONGNITION

- Alexander von Humboldt Research Fellowship (**2022-2024**)
- University of Pretoria Post-doctoral Fellowship (**2021-2022**)
- TWAS Research Grants Programme/UNESCO (**2021-2023**)
- Beneficiary of University of Pretoria Bursary for PhD study **(2017/2019)**
- NRF Scholarship for PhD study in physics **(2017/2020)**
- 70th Annual International Society of Electrochemistry meeting Poster Award **2019** edition

CONFERENCES, SCIENTIFIC VISIT

- 74th Annual Meeting of the International Society of Electrochemistry (ISE) Lyon, France (2023) Poster Presentation. **Title**: Biowaste derived microporous carbon as an efficient sulfur host for Li-sulfur battery
- Visiting researcher at Friedrich-Schiller-Universität Jena, CEEC - Center for Energy and Environmental Chemistry Jena, Germany, July-August 2023
- Network Meeting of the Alexander von Humboldt Foundation 2023, 19 – 21 April 2023, Johannes Gutenberg University Mainz, Poster Presentation. **Title**: Biowaste derived microporous carbon as efficient Sulfur host for Li-Sulfur battery
- 11th International Conference of the African Materials Research Society (AMRS) Université Cheikh Anta Diop de Dakar, Dakar – Senegal (2022), Oral Presentation. **Title**: Enhanced capacitive behavior of peanut-shell activated carbon/molybdenum oxide/molybdenum carbide ternary composites
- Visiting researcher at A.J. Drexel Nanomaterials Institute Department of Materials Science and Engineering, Drexel University USA (2019 and 2021)
- Waste-Water-Energy as Resource for a Sustainable Future, Italy-South Africa "ISARP Projects and Beyond", 11th November 2021, Oral presentation. **Title**: Porous carbon nanostructures derived from peanut shell waste for supercapacitor applications
- Visiting researcher at Laboratory for Research on the Structure of Matter (LRSM), University of Pennsylvania (2019)

- 70th Annual International Society of Electrochemistry (ISE) Meeting in Durban, South African (2019) Poster Presentation. **Title**: Effect of porosity enhancing agents on the electrochemical performance of high-energy ultracapacitor electrodes derived from peanut shell waste
- International Conference on Surfaces, Coatings and Nanostructured Materials (NANOSMAT-AFRICA 2018, Western Cape) South Africa, Oral Presentation. **Title**: Effect of porosity enhancing agents on the electrochemical performance of high-energy ultracapacitor electrodes derived from peanut shell waste
- 7th International Conference on Nanoscience and Nanotechnology in Africa (NanoAfrica 2018), South Africa, Poster Presentation. **Title**: Biosynthesis of Magnesioferrite MgFe2O4 spinel nanostructures from Hibiscus Sabdariffa calices extracts for supercapacitors applications.

MEMBERSHIP OF SCIENTIC SOCIETIES

- Alexander von Humboldt Fondation (AvH)
- The World Academy of Sciences (TWAS)
- International Society of Electrochemistry (ISE)
- Electrochemical Society (ECS)
- Women in Sciences
- African Materials Research Society (AMRS)
- Organization for Women in Science for the Developing World (OWSD)

SELECTED PUBLICATIONS

1. Daba T. Bakhoum, Samba Sarr, Vusani M. Maphiri, **Ndeye F. Sylla,** Ndeye M. Ndiaye, Modou Diop, Balla D. Ngom, Mohamed Chaker, Ncholu Manyala, Embedding atomic cobalt within hierarchical porous carbon derived from cross-linked polymers for high energy supercapacitors, *Journal of Energy Storage* 80 (2024) 110353 https://doi.org/10.1016/j.est.2023.110353

2. Daba T. Bakhoum, **Ndeye F. Sylla**, Samba Sarr, Vusani M. Maphiri, Ndeye M. Ndiaye, Delvina J. Tarimo, Astou Seck, Balla D. Ngom, Mohamed Chaker, Ncholu Manyala, Nitrogen-phosphorous co-doped porous carbon from cross-linked polymers for supercapacitor applications, *Journal of Energy Storage* 68 (2023) 107695. https://doi.org/10.1016/j.est.2023.107695

3. Samba Sarr, **Ndeye F Sylla**, Daba T Bakhoum, Ndeye M Ndiaye, Delvina J Tarimo, Vusani M Maphiri, Balla D Ngom, Ncholu Manyala, Vanadium dioxide sulphur-doped reduced graphene oxide composite as novel electrode material for electrochemical capacitor, *Journal Energy Storage*, 55 (2022), 105666. https://doi.org/10.1016/j.est.2022.105666

4. Vusani M Maphiri, Daba T Bakhoum, Samba Sarr, **Ndeye F Sylla**, Gift Rutavi, Ncholu Manyala, Impact of Thermally Reducing Temperature on Graphene Oxide Thin Films and Microsupercapacitor Performance, *Nanomaterials*, 2022, 12, 2211. https://doi.org/10.3390/nano12132211

5. Bridget K. Mutuma, **Ndeye F. Sylla**, Amanda Bubu, Ndeye M. Ndiaye, Carlo Santoro, Alessandro Brilloni, Federico Poli, Ncholu Manyala, Francesca Soavi, Valorization of biodigestor plant waste in electrodes for supercapacitors and microbial fuel cells, *Electrochimica Acta*, 391 (2021), 138960. https://www.sciencedirect.com/science/article/pii/S0013468621012500

6. **Ndeye F. Sylla,** Samba Sarr, Ndeye M. Ndiaye, Bridget K. Mutuma, Astou Seck, Balla D. Ngom, Mohamed Chaker, Ncholu Manyala, Enhanced Electrochemical Behavior of Peanut-Shell Activated Carbon/Molybdenum Oxide/Molybdenum Carbide Ternary Composites, *Nanomaterials*, 2021, 11, 1056. https://www.mdpi.com/2079-4991/11/4/1056

7. **Ndeye F. Sylla**, Ndeye M. Ndiaye, Balla D. Ngom, Bridget K. Mutuma, Damilola Momodu, Mohamed Chaker, Ncholu Manyala, Ex-situ nitrogen-doped porous carbons as electrode materials for high-performance supercapacitor,

Journal of Colloid and Interface Science, 569, (2020), 332-345.https://www.sciencedirect.com/science/article/pii/S0021979720302137

8. Balla D. Ngom, Ndeye M. Ndiaye, **Ndeye F. Sylla**, Bridget K. Mutuma, Ncholu Manyala: Sustainable development of vanadium pentoxide carbon composites derived from Hibiscus sabdariffa family for application in supercapacitors, *Sustainable Energy & Fuels*, 4 (2020) 4814-4830. https://pubs.rsc.org/en/content/articlehtml/2020/se/d0se00779j

9. **Ndeye F. Sylla**, Ndeye M. Ndiaye, Balla D. Ngom, Damilola. Momodu, M. J. Madito, B. K. Mutuma, N. Manyala, Effect of porosity enhancing agents on the electrochemical performance of high-energy ultracapacitor electrodes derived from peanut shell waste, *Scientific report*, 9, (2019), 13673. https://www.nature.com/articles/s41598-019-50189-x

10. Damilola Momodu, **Ndeye F. Sylla**, Bridget Mutuma, Abdulhakeem Bello, Tshifhiwa Masikhwaa, Simon Lindberg, Aleksandar Matic, Ncholu Manyala: Stable ionic-liquid-based symmetric supercapacitors from Capsicum seed-porous carbons, Journal *of Electroanalytical Chemistry* ***838*** *(2019)* 119–128. https://www.sciencedirect.com/science/article/pii/S1572665719301419

A full list my publications is accessible on google scholar page:
https://scholar.google.co.za/citations?hl=en&tzom=240&user=QuXUr9kAAAAJ

LANGUAGE SKILLS

Mother tongue(s): Wolof
Other language(s):

	Understanding		***Writting***		***Speaking***
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	B2	C2	C2
FRENCH	C2	C2	C2	C2	C2
GERMAN	A1	A2	A1	A1	A1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user