



TO MAGNIFICA RETTRICE OF UNIVERSITA' DEGLI STUDI DI MILANO

ID CODE 7116

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 Chimica

Scientist- in - charge: Meroni Daniela

[Name and surname]

## CURRICULUM VITAE

### PERSONAL INFORMATION

Surname	Rajagopalan
Name	Kandeeban

### PRESENT OCCUPATION

Appointment	Structure
Post Doctoral Fellow Type B	Joint Academic Industrial Post Doc

### EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	Bachelors in Chemistry	Bharathiar University	2015
Specialization			
PhD	Chemistry	Bharathiar University	2023
Master	Chemistry	Bharathiar University	2017
Degree of medical specialization			
Degree of European specialization			
Other			

### REGISTRATION IN PROFESSIONAL ASSOCIATIONS



Date registration	of Association	City
NA		

## FOREIGN LANGUAGES

Languages	level of knowledge
Tamil	Native
English	Fluent

## AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award

## TRAINING OR RESEARCH ACTIVITY

**Engitec Technologies SpA.** Post Doctoral Researcher– May 2024–Present

- Dismantle, Quantitative and Qualitative analysis of the battery material.
- Hydrometallurgical leaching of Lithium-Ion Battery Blackmass.
- Optimization of Single stage leaching using the R-based CAT software (Chemometric Agile Tool—open-source software).
- Monitoring the kinetics of leaching through oxidation reduction potential.
- Optimization of double stage leaching for potential Pilot plant.

**Bharathiar University.** Ph. D. Researcher– Oct 2019–Aug 2023

- Synthesized an organo-metallic electrolytic additive for corrosion protection for Metal-Air battery application (**Patent No. 557806**).
- Recycled polyethylene wastes to two-dimensional Kish graphite for Mg-air battery.
- Converted Bagasse to gel for semi solid Metal-Air Battery (Patent applied).
- Published through collaborative works

## PROJECT ACTIVITY

Year	Project
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May Present	2024–	Hydrometallurgical recycling of spent lithium-ion batteries, joined academic-industry research.
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## PATENTS

Patent
‘Performance of Corrosion Inhibition of hexamethyl cyclotrisiloxane on Al 6205 alloy’ – IPR (India) – Patent No.: 557806 – Granted
‘Bagasse fibre-based gel as Quasi Electrolyte for Aluminium–Air Battery’ – IPR (India) – Ref number- 202241054507, dated – 23/09/2022 – under examination

## CONGRESSES AND SEMINARS

Date	Title	Place
7 days (17th May – 24th May 2022)	Synergistic Training program Utilizing the Scientific and Technological Infrastructure	Punjab Agricultural University, India
28, 29 September, 2020	International Virtual Conference on Renewable Energy Science and Technology (ICREST-2020)	Alagappa University, Karaikudi, Tamil Nadu, India

## PUBLICATIONS

Books
Kandeeban Rajagopalan, Manojkumar Kaliannan, and Saminathan Kulandaivel. "Transmission electron microscope." In Non-Destructive Material Characterization Methods, pp. 167–188. Elsevier, 2024.
Kaliannan, Manojkumar, Kandeeban Rajagopalan, Prasathkumar Thangavadivel, and Saminathan Kulandaivel. "Scanning probe microscope." In Non-Destructive Material Characterization Methods, pp. 151–165. Elsevier, 2024.

Articles in reviews
<ul style="list-style-type: none"><li>Vasu, Prasanth, Kandeeban Rajagopalan, Gayathri Chellasamy, Mirko Magni, Kyusik Yun, Manivannan Subramanian, Yuvaraj Haldorai, and M. S. Sivaramkumar. "Vanillin synthesis: Harnessing lignin resources from pulpwood trees through oxidative cleavage depolymerization." <i>Journal of the Indian Chemical Society</i> 102, no. 2 (2025): 101555.</li></ul>



- Kuppusamy, Satheesh, Anju P. Veedu, Akhila Maheswari Mohan, **Kandeeban Rajagopalan**, Mirko Magni, Lingesh Gopalakrishnan, and Prabhakaran Deivasigamani. "Punica grantum peel extract decorated Al-MOF scaffold as Solid-State Sensor/Concentrator for the Sensing/Reduction of Cr (VI) and its extended utility as a corrosion inhibitor in Al-Air batteries." *Chemical Engineering Journal* 496 (2024): 154070.
- Chellasamy, Gayathri, Shiva Kumar Arumugasamy, Satheesh Kuppusamy, Viswanathan Ekambaram, **Kandeeban Rajagopalan**, Sada Venkateswarlu, Prabhakaran Deivasigamani, Min Jae Choi, Saravanan Govindaraju, and Kyusik Yun. "MXene-MOF architectural hybrid-supported nickel single-atom catalysts for hydrogen evolution reactions." *Journal of Materials Chemistry A* 12, no. 2 (2024): 1115-1127.
- Chellasamy, Gayathri, Shiva Kumar Arumugasamy, **Kandeeban Rajagopalan**, Satheesh Kuppusamy, Prabhakaran Deivasigamani, Kook-Nyung Lee, Saravanan Govindaraju, and Kyusik Yun. "Fluorescent gold clusters for specific detection of SARS-CoV-2 nucleoprotein via fluorescence and electrochemical method." *Applied Surface Science* 641 (2023): 158511.
- George, Jijo, Kathireswari Palanisamy, Saminathan Kulandaivel, Preethee Saravanan, Deepthi Madathil Peedika, **Kandeeban Rajagopalan**, and Manoj Kumar Kaliyannan. "Impact of Cerium Oxide Nanoparticles on Survivability and Reproduction of Earthworm *Eudrilus eugeniae* and Its Compost Quality." *BioNanoScience* 13, no. 4 (2023): 1911-1921.
- **Kandeeban Rajagopalan**, Brindha Ramasubramanian, Sangeetha Velusamy, Seeram Ramakrishna, Arunachala Mada Kannan, Manojkumar Kaliyannan, and Saminathan Kulandaivel. "Examining the economic and energy aspects of manganese oxide in Li-ion batteries." *Materials Circular Economy* 4, no. 1 (2022): 22.
- Manojkumar, Kaliyannan, **Kandeeban Rajagopalan**, Ramasubramanian Brindha, Velusamy Sangeetha, and Kulandaivel Saminathan. "Non-precious metal-based integrated electrodes for overall alkaline water splitting." *Journal of the Indian Chemical Society* 99, no. 11 (2022): 100775.
- Ragupathy, Mohanraj, Brindha Ramasubramanian, **Kandeeban Rajagopalan**, and Ayyappadasan Ganesan. "Electrocatalytic response of the modified ZnO-G electrodes towards the oxidation of serotonin with multi metallic corrosion protection." *Journal of the Indian Chemical Society* 99, no. 11 (2022): 100768.
- **Kandeeban Rajagopalan**, K. Revathi, B. Revathi, S. Vishalee, K. Manojkumar, Khalid Mijasam Batoo, K. Saminathan, and P. Kathireswari. "Microwave assisted synthesis and characterization of Al<sub>2</sub>O<sub>3</sub>." *Materials Today: Proceedings* 48 (2022): 160-163.
- **Kandeeban Rajagopalan**, Brindha Ramasubramanian, K. Manojkumar, Seeram Ramakrishna, P. Marappan, and Ramasamy Kulandaivel Saminathan. "Organo-metallic electrolyte additive for regulating hydrogen evolution and self-discharge in Mg-air aqueous battery." *New Journal of Chemistry* 46, no. 41 (2022): 19950-19962.
- **Kandeeban Rajagopalan**, Saminathan, K., Manojkumar, K., Dilsha, C.G. and Krishnaraj, S., 2022. Battery economy: Past, present and future. *Materials Today: Proceedings*, 48, pp.143-147.



- Brindha, Ramasubramanian, **Kandeeban Rajagopalan**, K. Swarna Kamal, Kaliannan Manojkumar, Velusamy Nithya, and Kulandaivel Saminathan. "Andrographis paniculata absorbed ZnO nanofibers as a potential antimicrobial agent for biomedical applications." *Advances in Natural Sciences: Nanoscience and Nanotechnology* 12, no. 4 (2021): 045002.
- Mohanraj, R., R. Brindha, **Kandeeban Rajagopalan**, M. Mahendhar, K. Saminathan, and G. Ayyappadasan. "Electrochemical detection of 5-hydroxytryptamine using sustainable SnO<sub>2</sub>-Graphite nanocomposite modified electrode." *Materials Letters* 305 (2021): 130796.
- **Kandeeban Rajagopalan**, R. Brindha, K. Manojkumar, Khalid Mujasam Batoo, Emad H. Raslan, Muhammad Hadi, Ahamad Imran, and K. Saminathan. "Revealing the synergetic electrocatalyst behaviour of Kish graphite recovered from polyethylene plastics." *Materials Letters* 297 (2021): 129740.

## Congress proceedings

## OTHER INFORMATION

- Expertise in synthesizing nanomaterials for Batteries application.
- Experienced in hydrometallurgical leaching for recycling Lithium-Ion Batteries.
- Experienced in handling instruments AAS (Perkin Elmer AA 200, Elico S678), HPLC (Shimadzu), FT-IR (Shimadzu IRspirit with ATR), Electrochemical Workstation (CHI), SEM (Hitachi TM3000).
- Can design and develop an independent research work proposal and open to work in a group as well.

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.

Please note that CV WILL BE PUBLISHED on the University website and It is recommended that personal and sensitive data should not be included. This template is realized to satisfy the need of publication without personal and sensitive data.

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Place and date: Milan, 18/02/2025