



TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO

ID CODE 6669

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 Scienze per gli Alimenti, la Nutrizione e l'Ambiente dell'Università degli Studi di Milano**

Scientist- in - charge: **Prof. Christodoulou Michail**

**[Gayathri Chellasamy]**

## CURRICULUM VITAE

### PERSONAL INFORMATION

Surname	CHELLASAMY
Name	GAYATHRI

### PRESENT OCCUPATION

Appointment	Structure
NA	

### EDUCATION AND TRAINING

Degree	Course of studies	University	Year of achievement of the degree
Degree	B. Tech, Biotechnology	PABCET, Anna University	2018
PhD	Bionanotechnology	Gachon University, South Korea	2024
Master	Bionanotechnology	Gachon University, South Korea	2021

### REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City
NA		



## FOREIGN LANGUAGES

Languages	level of knowledge
Tamil	Native
English	Fluent
Korean	Intermediate

## AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
Mar 2019-Feb 2024	Recipient of International Student Support Program (Gachon University) from Mar 2019-Feb 2024- awarded full scholarship for Masters and PhD research.
2021-24	Recipient of “Excellent Thesis Award” for the academic year 2021-24 at Gachon University.
2020, 2023	Won Research award for the years 2020, 2023 for outstanding research publication from Brain Korea fellowship (2nd place- 500\$)

## TRAINING OR RESEARCH ACTIVITY

Description of activity
<p><b>Gachon University: PhD Research Scholar- Mar 2021-Feb 2024</b></p> <ul style="list-style-type: none"><li>• Synthesized and characterized single atom catalysts (SACs) supported on bioinspired materials</li><li>• Analyzed scanning transmission electron microscopy (STEM), X-ray absorption spectroscopy (XAS), X-ray photoelectron spectroscopy (XPS) results on SACs</li><li>• Collaboratively carried out and investigated density functional theory studies (DFT) on SACs.</li><li>• Potentially used SACs for biosensing and tumor therapy applications on cellular environments</li><li>• Been a graduate researcher under Brain Korea BK21 fellowship, Project titled Convergence Education Research Team to overcome geriatric diseases in preparation for the era of super-aging</li><li>• Actively participated and helped the project PI in writing research proposal for National Research Fellowship (NRF) as a senior graduate researcher</li><li>• Designed and assisted projects for fellow junior graduate students</li></ul> <p><b>Gachon University: Master’s Researcher- Mar 2019-Feb 2021</b></p> <ul style="list-style-type: none"><li>• Synthesized and characterized green carbon quantum dots and potentially used for biosensing of neurotransmitters.</li><li>• Designed cost effective dual mode sensing system for dopamine in geriatric plasma</li><li>• Independently handled Atomic Force Microscopy (Bio-AFM), various spectrometers like UV-vis, fluorescence, Raman, Infrared.</li></ul>



- Assisted and helped fellow graduate student in handling spectrometers.

### Workshops:

- Completed an Online course named Cancer in the 21st century: the genomic revolution taught by the University of Glasgow, through Futurelearn with certification- February 2018.
- Attended one-week implant training on vaccine production (DPT) at “Pasteur Institute of India”, Coonoor- November 2017
- Attended 1week Hands-on training on “Western blotting and Molecular cloning technique” at Centre for Stem Cell and Cancer Genomics “AMI Bioscience”, Coimbatore -June 2017
- 3 days Hands-on training on “microRNA Genomic- Tools” at Centre for Stem Cell and Cancer Genomics “AMI Bioscience”, Coimbatore- January 2017

### PROJECT ACTIVITY

Year	Project
2020	Been a <b>lead researcher</b> under a company project titled “ Non amplified molecular diagnostics development”
2021-24	Been a <b>post-graduate researcher</b> under Brain Korea BK21 fellowship, Project titled Convergence Education Research Team to overcome geriatric diseases in preparation for the era of super-aging

### CONGRESSES AND SEMINARS

Date	Title	Place
25-27 Nov 2020	2020 Korean Biochip Society Fall Conference	Jeju Shinhwa World Landing Convention Center & online participation, <b>Jeju</b>
17 -19 Nov 2021	2021 Korean Biochip Society Fall Conference	Jeju Shinhwa World Landing Convention Center, <b>Jeju</b>
03-08 July 2022	Carbon 2022	Imperial College London, <b>UK (Virtual)</b> Hosted by the British Carbon Group
11-16 Dec 2023	MRM2023/IUMRS-ICA2023	Kyoto International Conference Center, Kyoto, <b>Japan</b>
05-06 Feb 2024	2024 Korean Biochip Society Winter symposium	Vivaldi Park, <b>South Korea</b>



## PUBLICATIONS

Books
Arumugasamy, Shiva Kumar, <b>Gayathri Chellasamy</b> , Saravanan Govindaraju, Kyusik Yun, Types of Opto-electrochemical Active materials for Biosensor Design. In Health and Environmental Applications of Biosensing Technologies, pp. 51-68. Elsevier, 2024.
<b>Gayathri Chellasamy</b> , and Kyusik Yun. "Fundamentals of carbon and graphene quantum dots." In Carbon and Graphene Quantum Dots for Biomedical Applications, pp. 1-8. Woodhead Publishing, 2023.
<b>Gayathri Chellasamy</b> , Shiva Kumar Arumugasamy, Saravanan Govindaraju, and Kyusik Yun. "Recent trends in the development of nanomaterials for optical sensing of various human pathogens." In Recent Developments in Applied Microbiology and Biochemistry, pp. 281-289. Academic Press.
Arumugasamy, Shiva Kumar, <b>Gayathri Chellasamy</b> , Saravanan Govindaraju, and Kyusik Yun. "Recent developments in using atomic force microscopy in microbiology research: An update." In Recent Developments in Applied Microbiology and Biochemistry, pp. 317-323. Academic Press.
<b>Gayathri Chellasamy</b> , Rose Mary Kiriyanthan, Saravanan Govindaraju, Radha, Kyusik Yun. "Recent trends in the development of vaccine technologies to combat pandemic outbreaks and challenges". In Pandemic Outbreaks in the Twenty-First Century.
Arumugasamy, Shiva Kumar, <b>Gayathri Chellasamy</b> , Saravanan Govindaraju, and Kyusik Yun. "Electrode/electrolyte interface for photoelectrochemical water splitting." Nanostructured Materials for Photoelectrochemical Water Splitting (2021) 3-1.

Articles in reviews
<b>Gayathri Chellasamy</b> , Elumalai Varathan, Saravanan Govindaraju, Kyusik Yun, "Single-atom catalysts for biosensing: a progress in theoretical and mechanistic understanding." <i>Coordination Chemistry Reviews</i> 502 (2024) 215606. (IF: 20.6)
<b>Gayathri Chellasamy</b> , Shiva Kumar Arumugasamy, Satheesh Kuppasamy, Viswanathan Ekambaram, Kandeegan 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. <i>Journal of Materials Chemistry A</i> . 12, (2024): 1115-1127. (IF: 11.9)
Chandran, M., <b>Gayathri Chellasamy</b> ., Veerapandian, M., Dhanasekaran, B., Arumugasamy, S.K., Govindaraju, S. and Yun, K., Fabrication of label-free immunoprobe for monkeypox A29 detection using one-step electrodeposited molybdenum oxide-graphene quantum rods. <i>Journal of Colloid and Interface Science</i> , 660, (2024) 412-422. (IF: 9.9)
<b>Gayathri Chellasamy</b> , Shiva Kumar Arumugasamy, Myeong Jin Nam, Sada Venkateswarlu, Elumalai Varathan, Karthikeyan Sekar, Kamaraj Manokaran, Min-Jae Choi, Saravanan Govindaraju, and Kyusik Yun.





<p>"Experimental and simulation studies of bioinspired Au-enhanced copper single atom catalysts towards real-time expeditious dopamine sensing on human neuronal cell." <i>Chemical Engineering Journal</i> 471 (2023) 144842. (IF: 15.1)</p>
<p><b>Gayathri Chellasamy</b>, Shiva Kumar Arumugasamy, Kandeegan Rajagopalan, Satheesh Kuppasamy, Prabhakaran Deivasigamani, Kook-Nyung Lee, Saravanan Govindaraju, Kyusik Yun. "Fluorescent gold clusters for specific detection of SARS-CoV-2 nucleoprotein via fluorescence and electrochemical method." <i>Applied Surface Science</i> (2023) 158511. (IF: 6.7)</p>
<p><b>Gayathri Chellasamy</b>, Saravanan Govindaraju, Kyusik Yun. "Systematic review on fate and behavior of microplastics towards the environment." <i>TrAC Trends in Analytical Chemistry</i> (2023) (IF: 13.1)</p>
<p>Venkateswarlu, Sada, Muhammad Umer, Younghu Son, Saravanan Govindaraju, <b>Gayathri Chellasamy</b>, Atanu Panda, Juseong Park. "An Amiable Design of Cobalt Single Atoms as the Active Sites for Oxygen Evolution Reaction in Desalinated Seawater." <i>Small</i> (2023) 2305289. (IF: 13.3)</p>
<p>Arumugasamy, Shiva Kumar, <b>Gayathri Chellasamy</b>, Kyusik Yun, Jinho Hyun. "Bio-quantum dots for electrochemical sensing of cardiac biomarkers of acute myocardial infarction." <i>Journal of Industrial and Engineering Chemistry</i> (2023). (IF: 6.1)</p>
<p>Lee, Jeong Hyun, <b>Gayathri Chellasamy</b>, Kyusik Yun, Myeong Jin Nam. "EGF-expressed human mesenchymal stem cells inhibit collagenase1 expression in keratinocytes." <i>Cellular Signalling</i> 110 (2023) 110827. (IF: 4.8)</p>
<p>Veerapandian, Mekala, Subramaniyan Ramasundaram, Peter Jerome, <b>Gayathri Chellasamy</b>, Saravanan Govindaraju, Kyusik Yun, and Tae Hwan Oh. "Drug Delivery Application of Functional Nanomaterials Synthesized Using Natural Sources." <i>Journal of Functional Biomaterials</i> 14 (2023) 426. (IF: 4.8)</p>
<p>Shiva Kumar Arumugasamy, <b>Gayathri Chellasamy</b>, Sankar Sekar, Sejoon Lee, Saravanan Govindaraju, Kyusik Yun, "TriMOF synergized on the surface of Activated carbon produced from Pineapple leaves for the environmental pollutant reduction and oxygen evolution process" <i>Chemosphere</i> (2022) 131893. (IF: 8.8)</p>
<p><b>Gayathri Chellasamy</b>, Rose Mary Kiriyanthan, Theivanayagam Maharajan, A. Radha, and Kyusik Yun. "Remediation of microplastics using bionanomaterials: A review." <i>Environmental Research</i> 208 (2022) 112724. (IF: 8.3)</p>
<p>Maharajan, Theivanayagam, <b>Gayathri Chellasamy</b>, Ajeesh Krishna TP, Stanislaus Antony Ceasar, and Kyusik Yun. "The role of metal transporters in phytoremediation: A closer look at Arabidopsis." <i>Chemosphere</i> (2022) 136881. (IF: 8.8)</p>
<p>Saravanan Govindaraju, Shiva Kumar Arumugasamy, <b>Gayathri Chellasamy</b>, Kyusik Yun "ZnMOF decorated Bio Activated Carbon for photocatalytic degradation, oxygen evolution and reduction catalysis". <i>Journal of Hazardous Materials</i> 421 (2021) 126720. (IF: 13.6)</p>
<p><b>Gayathri Chellasamy</b>, Shiva Kumar Arumugasamy, Saravanan Govindaraju, Kyusik Yun, "Green synthesized carbon quantum dots from maple tree leaves for biosensing of Cesium and electrocatalytic oxidation of glycerol" <i>Chemosphere</i> (2021) 131915. (IF: 8.8)</p>



<p><b>Gayathri Chellasamy</b>, Seshadri Reddy Ankireddy, Kook-Nyung Lee, Saravanan Govindaraju, and Kyusik Yun. "Smartphone-integrated colorimetric sensor array-based reader system and fluorometric detection of dopamine in male and female geriatric plasma by bluish-green fluorescent carbon quantum dots." <i>Materials Today Bio</i> 12 (2021) 100168. (IF: 8.2)</p>
<p><b>Gayathri Chellasamy</b>, Shiva Kumar Arumugasamy, Saravanan Govindaraju, and Kyusik Yun. "Analytical insights of COVID-19 pandemic." <i>TrAC Trends in Analytical Chemistry</i> (2020) 116072. (IF: 13.1)</p>
<p>Arumugasamy Shiva Kumar, <b>Gayathri Chellasamy</b>, Sivalingam Gopi, Saravanan Govindaraju, and Kyusik Yun. "Current advances in the detection of neurotransmitters by nanomaterials: An update." <i>TrAC Trends in Analytical Chemistry</i> 123 (2020) 115766. (IF: 13.1)</p>

## OTHER INFORMATION

Professional Website Links
 LinkedIn <a href="https://www.linkedin.com/in/gayathri-chellasamy">www.linkedin.com/in/gayathri-chellasamy</a>
 Google Scholar <a href="https://scholar.google.com/citations?user=jOgCCWYAAAAJ&amp;hl=en&amp;oi=ao">https://scholar.google.com/citations?user=jOgCCWYAAAAJ&amp;hl=en&amp;oi=ao</a>

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