

# Curriculum vitae

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## EDUCATION

### **2005-2009**

Doctor of Philosophy (PhD) in Botany (Marine algae)  
Bharathidasan University (BDU), INDIA.

Thesis title: Studies on the estuarine and marine diatoms from Karaikal,  
Southeast coast of India

### **2000-2002**

Master of Science (M.Sc.) in Botany  
Bharathidasan University (BDU), INDIA.

### **1997-2000**

Bachelor of Science (B.Sc.) in Botany  
Bharathidasan University (BDU), INDIA.

## PROFESSIONAL EXPERIENCES

**Senior Lecturer**, 8<sup>th</sup> February 2011 to 30<sup>th</sup> July 2023.

Faculty of Industrial Sciences and Technology,  
University of Malaysia Pahang, **MALAYSIA.**

**Post Doctorate Fellow** (07<sup>th</sup> August 2009 to 21<sup>st</sup> July 2010)

School of Engineering and Advanced Technology (SEAT), Massey University,  
**Tennent Drive, Palmerston North 4410, New Zealand.**

## INVITED KEYNOTE SPEAKER

1. **Invited Keynote Lecture: Agriculture Sustainability and Food Production of Algae (2023)**, International conference on Advances in Food Technology (IAFT 2K23)” held on November 24, 2023 at Department of Food Technology, Bannari Amman Institute of Technology, Sathyamangalam, India
2. **Invited Keynote Lecture: Agriculture Sustainability and Applications of Microalgae (2021)**, Maejo International Conference “Essential Innovation and Issues on Agriculture and Social Sciences in the Future World” held on December 25-26, 2021 at Maejo University, Chiang Mai, THAILAND.
3. **Speaker Sharing session: Publishing at University for Beginners to Intermediate Levels (2022)**, Faculty of Industrial Sciences and Technology, 25<sup>th</sup> May 2022, Universiti Malaysia Pahang, MALAYSIA.
4. **Invited Keynote Lecture: Agriculture Sustainability and Applications of Microalgae (2021)**, Maejo International Conference “Essential Innovation and Issues on Agriculture and Social Sciences in the Future World” held on December 25-26, 2021 at Maejo University, Chiang Mai, THAILAND.
5. **Invited Keynote Lecture: Algae as a sustainable feed for aquaculture practices (2019)** Special Lecture and Inaugural function of the Ornamental fish Aquarium, 27 August 2019, Alagappa University, Karaikudi, Tamil Nadu, **INDIA**
6. **Invited Keynote Lecture: Sustainability of Microalgae Process and Economic Issues (2019)** 2nd International Conference on Global initiatives for sustainable development: Issues and Strategies 24-25 June 2019, Bangkok, **THAILAND**
7. **Invited Keynote Lecture: Microalgae Process and Economics (2018)**  
2nd Maejo – Engineo International Conference on Renewable Energy (MEICRE 2018), from 41-15<sup>th</sup> December 2018, Chiang Mai, **THAILAND**
8. **Invited Keynote Lecture: Microalgae Biofuel: Opportunities & Challenges (2018)**  
2nd International Conference on Recent Trends in Microbiology (RTM-2018) on 11-12-Jan, 2018. Alagappa University, Karaikudi, Tamil Nadu, **INDIA**
9. **Invited Keynote Lecture: Biodiesel from Algae (2017)**  
The 1st Maejo-Engineo International Conference on Renewable Energy (MEICRE 2017), from 31st May – 2nd June 2017 held at Chiang Mai, **THAILAND**
10. **Invited Keynote Lecture: Microalgal Biodiversity (2016)**  
Mannai Rajagopalaswami Government Arts College, Mannargudi held at Department of Botany, June 2016, Tamil Nadu, **INDIA**
11. Paper Presentation: Bioactive compounds from the marine diatoms of *Amphora coffeaeformis* (Ag) Kutz against human pathogens, 21st North American Diatom Symposium Flathead Lake Biological Station Polson, Montana September 14-18, 2011, **USA**.

## Ph.D. SUPERVISION

1. **Dr. Palaniselvam Kuppusamy (2015).**

*Title: In-vitro anticancer activity of noble metal nanoparticles synthesized from edible weed plant extract up- regulated on HCT-116 colon cancer cells.*

2. **Dr. Amarchand Chordia Murugan (2018).**

*Title: Biological and structural studies of polyphenols from seaweeds for their anticancer and ant diabetic functions.*

3. **Dr. Prakash Bhuyar (2020).**

*Title: Biodegradation of polymer using microalgae and its toxins*

## M. Sc SUPERVISION BY RESEARCH

1. **Ms. Nur Amalina Ahmad (2014).**

*Title: Biosynthesis of volatile compounds and the quality and quantity of essential oil from *Etilingera elatior*.Smith (Zingiberaceae) .*

2. **Ms. Nurul Ashikin Abdul Karim (2014).**

*Title: Biological and structural studies of polyphenols from seaweeds for their anticancer and anti- diabetic functions.*

3. **Mr. Karthick Murugan Palanisamy (2021).**

*Title: Economical cultivation system of microalgae for lipid production of EPA and DHA rich raw materials.*

4. **Ms. Karthiani Kanagesan (2022).**

*Title: Plastic waste biodegradation using photosynthetic microalgae.*

## RESEARCH GRANTS

Title	Granting Agency	Grant Duration	USD (Total)	Role
Bioactive macromolecules from selected microalgae strain <i>Amphora sp.</i> and <i>Pavlova sp.</i> for pharmaceutical applications.	UMP Flagship Grant RDU182205-2	2018-21	15,797.00	Principal Investigator
Approach to bioremediation: isolation and identification of potential photosynthetic micro-algae for biodegradation of plastic waste in Malaysia.	University Malaysia Pahang RDU1703167	2019-21	8,529.00	Principal Investigator
n-vitro mosquito larvicidal activity of microalgae <i>Lyngbya sp.</i> against human vectors <i>Aedes</i> and <i>Culex</i> .	University Malaysia Pahang RDU1703167	2017-19	7,540.00	Principal Investigator
A novel species of high lipid contents microalgae for biodiesel production through Supercritical Fluid Extraction method (SFE) - a new approach.	University Malaysia Pahang RDU1403145	2014-16	7,367.00	Principal Investigator

Biodegradation of plain and Seaweed polyphenols; antioxidative, antimicrobial and cytotoxic studies.	ERGS (RDU120603)	2012-15	21,013.00	Principal Investigator
Studies on the anti-microbial properties and bioactive compounds from marine diatoms of Kuantan coast, east coast of Peninsular Malaysia.	University Malaysia Pahang RDU110397	2011-14	9,690.00	Principal Investigator
Studies on the anti-microbial properties and bioactive compounds from marine diatoms of Kuantan coast, east coast of Peninsular Malaysia.	University Malaysia Pahang RDU110397	2011-14	9,690.00	Principal Investigator
Potential antioxidant properties of sulfated polysaccharides from the edible marine Seaweeds.	University Malaysia Pahang RDU120302	2012-14	9,839.00	Principal Investigator
Expolaration of potential native microalgae ( <i>Chlorella sp.</i> and <i>Scenedesmis sp.</i> ). A new source for hydrogen production through biomass fermentation and stress growth pathway.	Ministry of Higher Education, Government of Malaysia	2020-22	4,945.00	Co-Investigator
Integrated struvite crystallization and microalgal growth for biofertilizer production using source-separated urine.	Government of India Department of Science and Technology	2019-21	54,642.00	Co-Investigator
Lipids from <i>Nannochloropsis sp.</i> and <i>Scenedesmus sp.</i> for lipid to be used as feedstock in biodiesel production.	UMP Flagship Grant RDU182205-1	2018-21	13,325.00	Co-Investigator
Systematic evaluation of selected malaysian plant species for ovicidal and oviposition deterrent activities and repellency against <i>Aedes aegypti</i> .	University Malaysia Pahang RDU170362	2017-19	8,553.00	Co-Investigator
Rapid in-vitro micropropagation of <i>Ficus carica</i> .	University Malaysia Pahang RDU160327	2016-18	6,551.00	Co-Investigator
Global Warming - Zero Waste Processing.	LRGS	2012-15	48,454.00	Co-Investigator
Nutritional compositions, antioxidant and antidiabetic potential of <i>Chassalia curviflora</i> (wall.) thw. Florer.	University Malaysia Pahang RDU130306	2013-15	8,529.00	Co-Investigator

## PUBLICATIONS

1. Karthick Murugan Palanisamy, Gaanty Pragasa Maniam, Mohd Hasbi Ab. Rahim, **Natanamurugaraj Govindan**. 2024. Biodegradation of polyethylene by microalgae *Anabaena sp.* and *Chlorococcum sp.* AIP Conference Proceedings, 3023(1). <https://doi.org/10.1063/5.0188313>
2. Karthick Murugan Palanisamy, Prakash Bhuyar, MohdHasbi Ab Rahim, Ashiwin Vadiveloo, Naif Abdullah Al-Dhabi, **Natanamurugaraj Govindan**, GaantyPragas Maniam. 2023. Lipid Enhancement in Oleaginous *Nannochloropsis sp.* under Nitrate Limitation for Future Bioenergy Production. International Journal of Energy Research, <https://doi.org/10.1155/2023/5412660>
3. Karthick Murugan Palanisamy, Prakash Bhuyar, Mohd Hasbi Ab Rahim, **Natanamurugaraj Govindan**, Gaanty Pragasa Maniam, 2023. Cultivation of microalgae *Spirulina platensis* Biomass Using Palm Oil Mill Effluent for Phycocyanin Productivity and Future Biomass Refinery Attributes. International Journal of Energy Research, in progress. <https://doi.org/10.1155/2023/2257271>
4. BR Nithin, Prakash Bhuyar, Gaanty Pragasa Maniam, Mohd Hasbi Ab Rahim, **Natanamurugaraj Govindan**, 2023. Environment Friendly Approach for Plant Mediated Green Biosynthesis of Gold Nanoparticles and Their Modern Applications in Biomedical Aspects-an Updated Report. BioNanoScience 13,1517-1540.<https://doi.org/10.1007/s12668-023-01134-w>
5. KM Palanisamy, MHA Rahim, GP Maniam, **N Govindan**. 2023. Influence of photobioreactor on cultivation of *Tetraselmis sp.* under various colors and light intensities for biodiesel production. Journal of Engineering and Technology, 14(1),41-49.
6. Rihashni Thivagaran, Nurul Huda Abu Bakar, Karthick Murugan Palanisamy, Prakash Bhuyar, **Natanamurugaraj Govindan**, Mohd Hasbi Ab Rahim, Gaanty pragasa Maniam. 2023. Climate change: Consequences for neglecting the early warnings a brief testimony Maejo International Journal of Energy and Environmental Communication, 5(2), 55–63. <https://doi.org/10.54279/mijeec.v5i2.250850>
7. Monaambighai Kumaran, Karthick Murugan Palanisamy, Prakash Bhuyar, Gaanty Pragasa Maniam, Mohd Hasbi Ab Rahim, **Natanamurugaraj Govindan**. 2023. Agriculture of microalgae *Chlorella vulgaris* for polyunsaturated fatty acids (PUFAs) production employing palm oil mill effluents (POME) for future food, wastewater, and energy nexus, 9, 100169 <https://doi.org/10.1016/j.nexus.2022.100169>
8. **Natanamurugaraj Govindan**, Chadayam, P., Maniam, G.P., Rahim, M.H.A., Sulaiman, A.Z. and Chisti, Y. 2022, June. Production of lipids by *Tetraselmis sp.* grown in palm oil mill effluent. In AIP Conference Proceedings, 2454(1), 040005). AIP Publishing LLC <https://doi.org/10.1063/5.0079106>
9. Karthiani Kanagesan, Rahmath Abdulla, Eryati Derman, Mohd Khalizan Sabullah, **Natanamurugaraj Govindan**, Jualang Azlan, Gansau. 2022. A sustainable approach to green algal bioplastics production from brown seaweeds of Sabah, Malaysia, Journal of King Saud University-Science, 34(7), 102268 <https://doi.org/10.1016/j.jksus.2022.102268>
10. Pathy, A., Nageshwari, K., Ramaraj, R., Maniam, G.P., **Govindan, N.** and Balasubramanian, P. 2022. Biohydrogen production using algae: Potentiality, Economics and Challenges. Bioresource Technology, p.127514. <https://doi.org/10.1016/j.biortech.2022.127514>

11. Palanisamy, K.M., Rahim, M.H.A., **Govindan, N.**, Ramaraj, R., Kuppusamy, P. and Maniam, G.P. 2022. Effect of blue light intensity and photoperiods on the growth of diatom *Thalassiosira pseudonana*. Bioresource Technology Reports, 19, 101152. <https://doi.org/10.1016/j.biteb.2022.101152>
12. Karthick Murugan Palanisamy, Gaanty Pragas Maniam, Ahmad Ziad Sulaiman, Mohd Hasbi Ab. Rahim, **Natanamurugaraj Govindan\***, Yusuf Chisti. 2022. Palm oil mill effluent for lipid production by the diatom *Thalassiosira pseudonana*, Fermentation, 8(1), 23 <https://doi.org/10.3390/fermentation8010023>
13. **Natanamurugaraj Govindan**, Gaanty Pragas Maniam, Mohd Hasbi Ab Rahim, Ahmad Ziad Sulaiman, Azilah Ajit, 2022. Biological macromolecules from algae and their antimicrobial applications, Biological Macromolecules, 203-217, Academic Press (Elsevier) <https://doi.org/10.1016/B978-0-323-85759-8.00008-7>
14. Prakash Bhuyar, Marlen Trejo, Aizi Nor Mazila Ramli, **Natanamurugaraj Govindan**, Yuwalee Unpaprom, Rameshprabu Ramaraj. 2022. Enhancement of fermentable sugars obtained from *Amorphophallus* Spp. tuber for bioethanol production by optimizing temperature and pre-treatment concentration, Materials Science Forum, 1056, 185-190 <https://doi.org/10.4028/p-jyh7a2>
15. Saravanan Jayakumar, Prakash Bhuyar, Arivalagan Pugazhendhi, Mohd Hasbi Ab Rahim, Gaanty Pragas Maniam, **Natanamurugaraj Govindan\***, 2021. Effects of light intensity and nutrients on the lipid content of marine microalgae (diatom) *Amphiprora* sp. for promising biodiesel production. Science of the Total Environment, 768, 145471, Q1, IF=6.551, Scopus Index, Elsevier. <https://doi.org/10.1016/j.scitotenv.2021.145471>
16. Karthick Murugan Palanisamy, Primilla Paramasivam, Gaanty Pragas Maniam, Mohd Hasbi Ab Rahim, **Natanamurugaraj Govindan\***, Yusuf Chisti\*, 2021. Production of lipids by *Chaetoceros affinis* in media based on palm oil mill effluent, Journal of Biotechnology, 327, 86-96, Q1, IF=3.503, Scopus Index, Elsevier. <https://doi.org/10.1016/j.jbiotec.2020.12.021>
17. **Natanamurugaraj Govindan**, Gaanty Pragas Maniam, Ahmad Ziad Sulaiman, Azilah Ajit, Tawan Chatsungnoen, Yusuf Chisti. 2021. Production of Renewable Lipids by the Diatom *Amphora* copulate, Fermentation, 7(1), 37.Q1, Scopus Index, WoS, MDPI. <https://doi.org/10.3390/fermentation7010037>
18. Prakash Bhuyar, Gaanty Pragas Maniam, **Natanamurugaraj Govindan\***, 2021. Isolation and characterization of bioactive compounds in medicinal plant *Centella asiatica* and study the effects on fungal activities. Journal of microbiology, biotechnology and food sciences, 10(4), 631-635, Q2, Scopus Index, WoS, Slovakia. <https://doi.org/10.15414/jmbfs.2021.10.4.631-635>
19. Prakash Bhuyar, Fakhrul Farez, Gaanty Pragas Maniam, **Natanamurugaraj Govindan\***, 2021. Removal of nitrogen and phosphorus from agro- industrial wastewater by using microalgae collected from coastal region of Peninsular Malaysia, African Journal of Biological Sciences, 3(1), 58-66, Q4, Google Scholar, African Science Publications. <https://ssrn.com/abstract=3771961>
20. Prakash Bhuyar, Sathyavathi Sundararaju, Mohd Hasbi Ab Rahim, Gaanty Pragas Maniam, **Natanamurugaraj Govindan\***, 2021. Enhanced productivity of lipid extraction by urea stress conditions on marine microalgae *Coelastrum* sp. for improved biodiesel production. Bioresource Technology Reports, 15, 100696, Q2, Scopus Index, Elsevier.



<https://doi.org/10.1016/j.biteb.2021.100696>

21. Prakash Bhuyar, Sathyavathi Sundararaju, Mohd Hasbi Ab Rahim, Yuwalee Unpaprom, Gaanty Pragasa Maniam, **Natanamurugaraj Govindan\***, 2021. Antioxidative study of polysaccharides extracted from red (*Kappaphycus alvarezii*), green (*Kappaphycus striatus*) and brown (*Padina gymnospora*) marine macroalgae/seaweed. *SN Applied Sciences*, 3(4), 1-9, Scopus Index, Springer. <https://doi.org/10.1007/s42452-021-04477-9>
22. Nageshwari Krishnamoorthy, Baishali Deya, Yuwalee Unpaprom, Rameshprabu Ramaraj, Gaanty Pragasa Maniam, **Natanamurugaraj Govindan**, Sivaraman, Jayaraman Thirugnanam, Arunachalam, Balasubramanian Paramasivan, 2021. Engineering principles and process designs for phosphorus recovery as struvite: A comprehensive review. *Journal of Environmental Chemical Engineering*, 105579 Q1, IF=4.300, INSPEC Index, Elsevier, <https://doi.org/10.1016/j.jece.2021.105579>
23. Nageshwari Krishnamoorthy, Yuwalee Unpaprom, Rameshprabu Ramaraj, Gaanty Pragasa Maniam, **Natanamurugaraj Govindan**, Thirugnanam Arunachalam, Balasubramanian Paramasivan. 2021. Recent advances and future prospects of electrochemical processes for microalgae harvesting. *Journal of Environmental Chemical Engineering*, 105875, Q1, IF=4.300, INSPEC Index, Elsevier, <https://doi.org/10.1016/j.jece.2021.105875>
24. Krishnamoorthy Nageshwari, Dey Baishali, Yuwalee Unpaprom, Rameshprabu Ramaraj, Gaanty Pragasa Maniam, **Natanamurugaraj Govindan**, Arunachalam Thirugnanam, Paramasivan Balasubramanian, 2021. Exploring the dynamics of microalgal diversity in high-rate algal ponds. *The Future of Effluent Treatment Plants*, Elsevier, Chapter 31, 1st Edition, 615-660, <https://doi.org/10.1016/B978-0-12-822956-9.00031-3>
25. Bunushree Behera, Yuwalee Unpaprom, Rameshprabu Ramaraj, Gaanty Pragasa Maniam, **Natanamurugaraj Govindan**, Balasubramanian Paramasivan, 2021. Integrated biomolecular and bioprocess engineering strategies for enhancing the lipid yield from microalgae, *Renewable and Sustainable Energy Reviews*, 148, 111270, Q1, IF=12.110, Scopus Index, Elsevier. <https://doi.org/10.1016/j.rser.2021.111270>
26. Nurul Hajar Embong, Noor Hindryawati, Prakash Bhuyar, **Natanamurugaraj Govindan**, Mohd Hasbi Ab Rahim, Gaanty Pragasa Maniam, 2021. Enhanced biodiesel production via esterification of palm fatty acid distillate (PFAD) using rice husk ash (NiSO<sub>4</sub>)/SiO<sub>2</sub> catalyst, *Applied Nanoscience*, 1-9. Q2, IF= 3.198. <https://doi.org/10.1007/s13204-021-01922-4>
27. **Natanamurugaraj Govindan**, Gaanty Pragasa Maniam, Mashitah M Yusoff, Mohd Hasbi Ab Rahim, Tawan Chatsungnoen, Rameshprabu Ramaraj, Yusuf Chisti, 2020. Statistical optimization of lipid production by the diatom *Gyrodinium aureolum* sp. grown in industrial wastewater. *Journal of Applied Phycology*, 32:375-387, Q1, IF=2.328, Scopus Index, John Wiley & Sons, Inc. <https://doi.org/10.1007/s10811-019-01971-x>
28. Prakash Bhuyar, MH Rahim, S Sundararaju, GP Maniam, **Natanamurugaraj Govindan\***, 2020. Antioxidant and antibacterial activity of red seaweed *Kappaphycus alvarezii* against pathogenic bacteria, *Global Journal of Environmental Science and Management*, 6(1), 47-58, Q2, Scopus Index, GJESM Publisher, <https://doi.org/10.22034/GJESM.2020.01.04>

29. Karthiani Kanagesan, Karthick Murugan Palanisamy, Gaanty Pragasa Maniam, Mohd Hasbi Ab. Rahim, **Natanamurugaraj Govindan\***. 2020. Biodiesel production by microalgae *Nannochloropsis* sp. grown in palm oil mill effluent. *Maejo International Journal of Energy and Environmental Communication*, 3-2 (2021) 24-31, <https://doi.org/10.54279/mijeec.v2i3.245036>
30. Prakash Bhuyar, Mashitah M. Yusoff, Mohd Hasbi Ab. Rahim, Sathyavathi Sundararaju, Gaanty Pragasa Maniam, **Natanamurugaraj Govindan\***, 2020. Effect of plant hormones on the production of biomass and lipid extraction for biodiesel production from microalgae *Chlorella* sp. *The Journal of Microbiology, Biotechnology and Food Sciences*, 9(4),671-674. Q2 Scopus Index, WoS, Slovakia, <https://doi.org/10.15414/jmbfs.2020.9.4.671-674>
31. Prakash Bhuyar, Sundararaju Sathyavathi, Renukaradhya K Math, Gaanty Pragasa Maniam, **Natanamurugaraj Govindan\***, 2020. Production of bioethanol from starchy tuber (*Amorphophallus Commutatus*) and antimicrobial activity study of its extracts. *African Journal of Biological Sciences*,2(2) 70-76. Q4, Google Scholar, African Science Publications, <https://doi.org/10.33472/AFJBS.2.2.2020.70-7>
32. Prakash Bhuyar, Mohd Hasbi Ab Rahim, Sathyavathi Sundararaju, Rameshprabu Ramaraj, Gaanty Pragasa Maniam, **Natanamurugaraj Govindan\***, 2020. Synthesis of silver nanoparticles using marine macroalgae *Padina* sp. and its antibacterial activity towards pathogenic bacteria, *Beni-Suef University Journal of Basic and Applied Sciences*, 9(1),1-15. Peer-review, Open access journal Beni-Suef University, <https://doi.org/10.1186/s43088-019-0031-y>
33. Muhammad Nor Fazli Abd Malek, Noraini Mat Hussin, Nurul Hajar Embong, Prakash Bhuyar, Mohd Hasbi Ab Rahim, **Natanamurugaraj Govindan**, Gaanty Pragasa Maniam, 2020. Ultrasonication: a process intensification tool for methyl ester synthesis: a mini review. *Biomass Conversion and Biorefinery*, 1-11. Q2, IF= 2.602, Springer, Scopus index, <https://doi.org/10.1007/s13399-020-01100-6>
34. Prakash Bhuyar, Sathyavathi Sundararaju, Mohd Hasbi Ab Rahim, Rameshprabu Ramaraj, Gaanty Pragasa Maniam, **Natanamurugaraj Govindan\***, 2019. Microalgae cultivation using palm oil mill effluent as growth medium for lipid production with the effect of CO<sub>2</sub> supply and light intensity, *Biomass Conversion and Biorefinery*, 1-9. Q2, IF=3.48, Scopus Index, Springer, <https://doi.org/10.1007/s13399-019-00548-5>
35. Prakash Bhuyar, Mohd Hasbi Ab. Rahim, Mashitah M. Yusoff, Gaanty Pragasa Maniam, **Natanamurugaraj Govindan\***. 2019. A selective microalgae strain for biodiesel production in relation to higher lipid profile, *Maejo International Journal of Energy and Environmental Communication*,1(1), 8-14, Peer-review journal, Maejo University, Thailand. <https://doi.org/10.54279/mijeec.v1i1.244895>
36. Prakash Bhuyar, Dang Diem Hong, Emelina Mandia, Mohd Hasbi Ab. Rahim, Mashitah M. Yusoff, Gaanty Pragasa Maniam, **Natanamurugaraj Govindan**, 2019. Desalination of Polymer and Chemical industrial wastewater by using green photosynthetic microalgae, *Chlorella* sp., *Maejo International Journal of Energy and Environmental Communication*,1(3), 9-19, Peer-review journal, Maejo University, Thailand. <https://doi.org/10.54279/mijeec.v1i3.244924>
37. Prakash Bhuyar, Dang Diem Hong, Emelina Mandia, Mohd Hasbi Ab. Rahim, Mashitah M. Yusoff, Gaanty Pragasa Maniam, **Natanamurugaraj Govindan**, 2019. Effect of ultraviolet light on the degradation of Low-Density and High- Density Polyethylene



characterized by the weight loss and FTIR. Maejo International Journal of Energy and Environmental Communication,1(2), 26-31, Peer-review journal, Maejo University, Thailand. <https://doi.org/10.54279/mijeec.v1i2.244915>

38. Intan Shafinaz Abd Manaf, Mohd Hasbi Ab Rahim, Natanamurugaraj Govindan, Gaanty Pragas Maniam , 2018. A first report on biodiesel production from *Aglaia korthalsii* seed oil using waste marine barnacle as a solid catalyst, *Industrial Crops and Products*, 125, 395-400. Q1, IF=4.244, Scopus Index, Elsevier, <https://doi.org/10.1016/j.indcrop.2018.09.022>
39. Kyung Dong Lee, Palaniselvam Kuppusamy, Da Hye Kim, **Natanamurugaraj Govindan**, Gaanty Pragas Maniam, Ki Choon Choi, 2018. Forage crop *Lolium multiflorum* assisted synthesis of AgNPs and their bioactivities against poultry pathogenic bacteria in in-vitro, *Indian Journal of Microbiology*, 58 (4), 507-514.Q3, If=1.830, Scopus Index, Springer, <https://doi.org/10.1007/s12088-018-0755-8>
40. Bhuyar, Prakash and Zagde, Sourabh and Revankar, Rajesh and Yusoff, Mashitah and Ab. Rahim, Mohd Hasbi and **Govindan, Natanamurugaraj\***, 2018. Isolation, Characterization and Partial Purification of Keratinase from Keratinolytic Bacteria, *Scholar Journal of Applied Sciences and Research*, 1,6. IF=1.58, Peer Review Publons<http://dx.doi.org/10.2139/ssrn.3389068>
41. Kuppusamy, Palaniselvam, Soundharrajan, Ilavenil, Srigopalram, Srisesharam, Yusoff, Mashitah M, Maniam, Gaanty Pragas, **Govindan, Natanamurugaraj\***, Choi, Ki Choon 2017. Potential pharmaceutical and biomedical applications of Diatoms microalgae-An overview, *Indian Journal of Geo Marine Science*, 46(4), 663- 667.IF=0.328, Peer Review CSIR-NISCAIR. <http://nopr.niscair.res.in/handle/123456789/41113>
42. Palaniselvam Kuppusamy, **Natanamurugaraj Govindan\***, Mashitah M Yusoff, Solachuddin JA Ichwan, 2017. Protein are the biomarkers to deduct colon cancer progression, *Saudi Journal of Biological Sciences*, 24 (6),1212-1221, Q1,IF=2.802, Scopus Index, Elsevier <https://doi.org/10.1016/j.sjbs.2014.09.017>
43. S Prabhu, S Vijayakumar, P Manogar, Gaanty Pragas Maniam, **Natanamurugaraj Govindan\***, 2017. Homology modeling and molecular docking studies on Type II diabetes complications reduced PPAR $\gamma$  receptor with various ligand molecules, *Biomedicine & Pharmacotherapy*, 92, 528-535, Q1, IF=4.545, Scopus Index, Elsevier <https://doi.org/10.1016/j.biopha.2017.05.077>
44. Palaniselvam Kuppusamy, Soundharrajan Ilavenil, Srisesharam Srigopalram, Gaanty Pragas Maniam, Mashitah M Yusoff, **Natanamurugaraj Govindan\***, Ki Choon Choi, 2017. Treating of palm oil mill effluent using *Commelina nudiflora* mediated copper nanoparticles as a novel bio-control agent, *Journal of Cleaner Production*, 141, 1023-1029. Q1, IF=7.246, Scopus Index, Elsevier, <https://doi.org/10.1016/j.jclepro.2016.09.176>
45. Palaniselvam Kuppusamy, Soundharrajan Ilavenil, Srisesharam Srigopalram, Da Hye Kim, **Natanamurugaraj Govindan**, Gaanty Pragas Maniam, Mashitah M Yusoff, Ki Choon Choi, 2017. Synthesis of bimetallic nanoparticles (Au–Ag alloy) using *Commelina nudiflora* L. plant extract and study its on oral pathogenic bacteria, *Journal of inorganic and Organometallic Polymers and Materials*, 27 (2), 562-568, Q2, IF=1.941, Scopus Index, Springer, <https://doi.org/10.1007/s10904-017-0498-8>
46. Saravanan Jayakumar, Mashitah M Yusoff, Mohd Hasbi Ab Rahim, Gaanty Pragas Maniam, **Natanamurugaraj Govindan\***, 2017. The prospect of microalgal biodiesel

production using agro- industrial and industrial wastes in Malaysia, Journal of Renewable & Sustainable Energy, Reviews, 72, 33-47, Q1, IF=12.110, Scopus Index, Elsevier, <https://doi.org/10.1016/j.rser.2017.01.002>

47. Palaniselvam Kuppusamy, Solachuddin JA Ichwan, Putri Nur Hidayah Al-Zikri, Wastuti Hidayati Suriyah, Ilavenil Soundharrajan, **Natanamurugaraj Govindan\***, Gaanty Pragas Maniam, Mashitah M Yusoff, 2016. In vitro anticancer activity of Au, Ag nanoparticles synthesized using Commelina nudiflora L. aqueous extract against HCT-116 colon cancer cells. Biological trace element research, 173(2), 297-305, Q2, IF=2.639, Scopus Index, Springer, <https://doi.org/10.1007/s12011-016-0666-7>
48. Palaniselvam Kuppusamy, Mashitah M Yusoff, Gaanty Pragas Maniam, **Natanamurugaraj Govindan\***, 2016 Biosynthesis of metallic nanoparticles using plant derivatives and their new avenues in pharmacological applications-An updated report, Saudi Pharmaceutical Journal, 24 (4), 473-484 Q2, IF=2.879, Scopus Index, Elsevier, <https://doi.org/10.1016/j.jsps.2014.11.013>
49. Amarchand Chordia Murugan, Dahineeswari Vallal, Md Rezaul Karim, **Natanamurugaraj Govindan**, M Yusoff, Md Mokhlesur Rahman, 2015. In vitro antiradical and neuroprotective activity of polyphenolic extract from marine algae Padina australis, Journal of Chemical and Pharmaceutical Research, 7, 355-362, Peer Review, Google Scholar.
50. Saravanan Jayakumar, Liang Yan Peng, Mohd Hasbi Ab Rahim, Gaanty Pragas Maniam, **Natanamurugaraj Govindan\***, 2015. Studies about the effect of different photosynthetic light intensity on two isolated species of marine microalgae (diatom) for high lipid production, Advances in Environmental Biology, 9 (27), 332-340, Q4, IF=2.726, Peer Review, Open access.
51. Palaniselvam Kuppusamy, RS David Paul Raj, Soundharrajan Ilavenil, Balasubramanian Kaleeswaran, **Natanamurugaraj Govindan\***, Gaanty Pragas Maniam, Sivanesan Ravikumar, 2015. Evaluation of antihypercholesterolemic effect using Memecylon edule Roxb. ethanolic extract in cholesterol-induced Swiss albino mice, Journal of Acute Medicine, 5 (4), 85-91, Peer Review, Open access, Elsevier, <https://doi.org/10.1016/j.jacme.2015.09.001>
52. Palaniselvam Kuppusamy, Mashitah M Yusoff, Solachuddin JA Ichwan, Narasimha Reddy Parine, Gaanty Pragas Maniam, **Natanamurugaraj Govindan\***, 2015. Commelina nudiflora L. edible weed as a novel source for gold nanoparticles synthesis and studies on different physical– chemical and biological properties. Journal of Industrial and Engineering Chemistry, 27, 59-67, Q1 IF=5.278, Scopus Index, Elsevier, <https://doi.org/10.1016/j.jiec.2014.11.045>
53. Palaniselvam Kuppusamy, Solachuddin JA Ichwan, Narasimha Reddy Parine, Mashitah M Yusoff, Gaanty Pragas Maniam, **Natanamurugaraj Govindan\***, 2015. Intracellular biosynthesis of Au and Ag nanoparticles using ethanolic extract of Brassica oleracea L. and studies on their physicochemical and biological properties. Journal of Environmental Sciences, 29, 151-157, Q2, IF=4.302, INSPEC Index, Elsevier, <https://doi.org/10.1016/j.jes.2014.06.050>

54. Palaniselvam Kuppusamy, Mashitah M Yusoff, Gaanty Pragas Maniam, Solachuddin Jauhari Arief Ichwan, Ilavenil Soundharrajan, **Natanamurugaraj Govindan\***, 2014. Nutraceuticals as potential therapeutic agents for colon cancer: a review. *Acta Pharmaceutica Sinica B*, 4(3):173-181, Q1, IF=7.097, Scopus Index, Elsevier, <https://doi.org/10.1016/j.apsb.2014.04.002>
55. Palaniselvam Kuppusamy, M Yusoff Mashitah, Gaanty Pragas Maniam, **Natanamurugaraj Govindan\***, 2014. Biosynthesized gold nanoparticle developed as a tool for detection of HCG hormone in pregnant women urine sample. *Asian Pacific Journal of Tropical Disease* 4, 237. Peer Review, Index Copernicus, [https://doi.org/10.1016/S2222-1808\(14\)60538-7](https://doi.org/10.1016/S2222-1808(14)60538-7)
56. Arun. K., S Suguna, U Balasubramanian, M Yusoff, Gaanty Pragas, Serfoji P Maniam, **N Govindan\***, 2014. Hepatoprotective activity of Cinnamon zeylanicum leaves against alcohol induced albino rats. *International Journal of Engineering Research and Applications*, 8, 177-184, Peer Review, Index Copernicus.
57. Tam Siow Foon, Lian Ai Ai, Palaniselvam Kuppusamy, Mashitah M. Yusoff, **Natanamurugaraj Govindan\***, 2014. Studies on in vitro antioxidant activities of marine seaweeds from the east Coast region of Peninsula Malaysia using different extraction methods. *2014 Research Journal of Applied Sciences*, 9(3):141-146 Peer Review, Open access, <https://doi.org/10.3923/rjasci.2014.141.146>
58. Palaniselvam Kuppusamy, Mashitah M Yusoff, Gaanty Pragas Maniam, **Natanamurugaraj Govindan\***, 2013. A case study-Regulation and functional mechanisms of cancer cells and control its activity using plants and their derivatives, *Journal of Pharmacy Research*, 6, 884-92, Peer Review, Elsevier, <https://doi.org/10.1016/j.jopr.2013.08.002>
59. Rofiza Mansor, Norafattull Salwa Ab Rahman, Siti Fatimah Mohamad, Palaniselvam Kuppusamy, Mashitah M. Yusoff and **Natanamurugaraj Govindan\***, 2013. Isolation and identification of Marine Algae (*Oscillatoria* sp.) from Kuantan coastal region Malaysia and studies on their bioactive and antibacterial properties, *World Applied Sciences Journal*, 28(2), 200-204, Peer Review, Cross Ref; DOI (USA), <https://doi.org/10.5829/idosi.wasj.2013.28.02.1395>
60. Tam Siow Foon, Lian Ai Ai, Palaniselvam Kuppusamy, Mashitah M. Yusoff, **Natanamurugaraj Govindan\***, 2013. Studies on in vitro antioxidant activities of marine seaweeds from the east Coast region of Peninsula Malaysia. *Journal of Coastal Life Medicine* 2013; 1(3): 193-198 Peer Review, Open access, <https://bit.ly/3DW9hDW>
61. Nurul Farhana Rosly, Rabeah Adawiyah Abdul Razak, Palaniselvam Kuppusamy, Mashitah M. Yusoff, **Natanamurugaraj Govindan\***, Mashitah Mohd Yusoff, 2013. Induction of bioactive compound composition from marine microalgae (*Lyngbya* sp.) by using different stress condition, *Journal of Coastal Life Medicine*, 1, 205-209, Peer Review, Index Copernicus. <https://bit.ly/3xXH6kb>
62. Anantharaj. K., C. Govindasamy, G. **Natanamurugaraj.**, S. Jeyachandran, 2012. Characteristics of Water Quality in the Palk Strait, Southeast Coast of India, *World Journal of Agricultural Sciences* 8 (5): 525-528, Peer Review, Cross Ref; DOI (USA). <https://bit.ly/3EgzvBp>

## PATENT

Agent: Intellectual Property Corporation of Malaysia (MYIPO)  
Title: Compositions and methods for enhancing lipid production in microalgae Patent File No: **PI2018000263**.  
Patent filed year: 2018.

## BOOK PUBLICATION

Book Title	Year	Publisher	Level	Role & contribution
<b>ALGAE</b> (Biodiversity, Influential parameters and the applications)	2018	UMP Publisher	ISBN 978 967-2054-59-7	Author

## BOOK CHAPTERS PUBLICATION

Book Chapter Title	Year	Publisher	Level	Role & contribution
An introduction of vegetable oil in energy prospective for future	2022	Elsevier	International	Co-Author
Biological macromolecules from algae and their antimicrobial applications	2021	Elsevier	International	Author
Chapter 3: Plant Extracts-Sources of nanoparticles	2020	Elsevier	International	Co-Author
Sustainability in Microalgae Process and Economic Issues	2019	Springer	International	Author
Microbe-Host Metabolic Interaction: Probiotic Approach	2022	Springer	International	Co-Author
Exploring the dynamics of microalgal diversity in high-rate algal ponds	2021	Elsevier	International	Co-Author

## EXHIBITION AND AWARDS

Awards Title	Year	Organizer	Level
Creation, Innovation, Technology & Research Exposition (CITREX), UMP Gambang, Malaysia.	2019	University Malaysia Pahang	Silver Medal
The International Invention, Innovation & Technology Exhibition (ITEX) 2017, KLCC Malaysia.	2017	Ministry of Education (MOE) Malaysian	Gold Medal

Creation, Innovation, Technology & Research Exposition (CITREX), UMP Gambang, Malaysia.	2017	University Malaysia Pahang	Gold Medal
Malaysian Technological Exhibition (MTE, 2015) Putra World Trade Centre, Malaysia.	2015	Malaysian Association of Research Scientists (MARS)	Bronze Medal
Creation, Innovation, Technology & Research Exposition (CITREX), UMP Gambang, Malaysia.	2015	University Malaysia Pahang	Gold Medal
International Innovation Festival (INNOFEST) 2014, Melaka, Malaysia	2014	University Technical Malaysia Melaka	Gold Medal
International Youth Invention Contest (IYIC), South Korea.	2014	National Assembly of South Korea	Gold Medal
Kaohsiung International Invention Exhibition, Taiwan	2014	Taiwan Invention Products Promotion Association (TIPPA)	Gold Medal
Creation, Innovation, Technology & Research Exposition (CITREX), UMP Gambang	2013	University Malaysia Pahang	Silver Medal
National Conference for Postgraduate Research (NCON-PGR 2012)	2012	University Malaysia Pahang	Best Poster Award

### EDITORIAL BOARD MEMBER

Editorial Board	Year	Journal	Level	Role & contribution
Guest Editor	2022-	Material Science Forum Journal, 2022	International	Guest Editor
Editorial Board Member	2020-21	Maejo International Journal of Energy and Environmental Communication	International	Member
Editorial Board Member	2020-21	International Journal of Science & Engineering Invention	International	Member
Editorial Board Member	2019-to date	International Journal of Green Technology	International	Member
Assistant Editorial Board Member	2016-19	International Journal of Pharma Research and Health Sciences	International	Member
Editorial Board Member	2016-19	Analytical and Bioanalytical	International	Member

		Techniques (SMABT)		
Editorial Board Member	2016-17	International Journal of Medicine and Biosciences (IJMB)	International	Member
Editorial Board Member	2014-15	International Journal of Chemical and Life Sciences	International	Member
Editorial Board Member	2014-15	Journal of Research and Application	International	Member
Editorial Board Member	2014-15	International Journal of Diabetes & Clinical Research	International	Member
Editorial Board Member	2014-15	International Journal of Medicine and Biosciences	International	Member
Editorial Board Member	2012-13	Malaysian Society for Microbiology	International	Member
Editorial Board Member	2008-09	Seaweed Research and Utilization Association	International	Member

## CONSULTATIONS

Project Title	Year	Company	RM (Total)	Level	Role
Microalgae Mass Cultivation for essential nutrients.	From 2019	Algaetech International Berhad, Port Dickson, Malaysia	Unpaid	National	Consultant
Microalgae Mass Cultivation for Biofuel production.	From 2017	ABAN Infrastructure Pvt Ltd, Vhennai, India	Unpaid	International	Consultant

## ACADEMIC RECOGNITIONS

Awards Title	Year	Organizer	Level
Excellent Service Award	2020	Ministry of Higher Education, Government of Malaysia, Malaysia.	National
Highest Publishing Award	2021	University Malaysia Pahang, Malaysia.	National
Top cited Researcher Award	2021	University Malaysia Pahang, Malaysia.	National



Mitsui Chemicals Award	2020	Mitsui Chemicals Award, Japan	International
Cendekia Bitara Award (CBA)	2018	University Malaysia Pahang, Malaysia.	National
Educational Excellence Awards (EEA)	2017	PEARL Foundation for Educational Excellence, Madurai – 625 021, Tamil Nadu, India	International
Cendekia Bitara Award (CBA)	2015	University Malaysia Pahang, Malaysia.	National