



Dr. A. Arumugam
Professor

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Academic Qualifications: M.A./M.Sc./M.Phil./Ph.D./

Year	Degree	Subject	University/Institute
2003	Ph. D	Plant Science	University of Madras
1997	M. Sc.	Plant Science	University of Madras
1995	B. Sc.	Botany	Govt. Periyar Arts college
1992	HSS	Science	Kamban Govt, HSS
1989	SSLC	General	Ramamurthy Govt. HS,

Teaching Experience: 18 Years

Research Experience: 18 Years

Additional Responsibilities

1. Coordinator Alagappar Alumni Garden

Areas of Research

Agrotechniques, Phytochemistry, Pharmacogonancy, Biochemistry & Molecular biology, Chromatography, Plant Pathology, Plant Pathology, Analytical Techniques Nanotechnology, Microbial Dye degradation and Bio-imaging

Research Supervision / Guidance

Program of Study		Completed	Ongoing
Research	Ph.D.	2	5
	M.Phil.	24	-
Project	PG	39	-
	UG / Others	Nil	Nil

Publications

International		National		Others
Journals	Conferences	Journals	Conferences	Books / Chapters / Monographs / Manuals
35	38	3	28	6- Co-author

Cumulative Impact Factor (as per JCR) : 99.16
h-index : 16
i10 index : 18
Total Citations : 1201

Funded Research Projects

Completed Projects

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		
1	UGC	2010	2013	Micro propagation and germplasm conservation of endangered medicinal plants in Southern India	11.23
2	AURF	2010	2011	Development of Nanosensor for Bacterial pathogen detection	0.64

3	DST- PRIME MINISTER'S FELLOWSHIP SCHEME	2014	2018	Nanoparticles based bio degradation and power generation using textile waste water bacteria	24
4	AURF	2016	2017	Utilization of <i>pedalium murex</i> for biodiesel and Ag NPs production	1.5

Ongoing Projects

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		
1	MHRD - RUSA	2019	2021	Bio Synthesis and Phyto-Chemical Analytics for Cancer and other diseases.	4.74
2	Tamil Nadu State Council for Higher Education (TANSCH)	2021	2023	Developing zero waste management technology adapted to Karaikudi, Sivaganga District in Tamil Nadu	50.94

Consultancy Projects: Nil

Others : Nil

Note: Budget must be rounded to two decimal places

Events organized in leading roles

Number of Seminars / Conferences / Workshops / Events organized: 3

1. International Conference on "Innovative and Emerging Trends in Botany – 2019" [ICIETB-2019] - 6th - 7th November 2019 [Co-Convener]
2. Four Days National Level Workshop and Training Programme on Cultivation of Mushroom and Business commercialization during January 8 -11th 2018 [Convener]
3. One day seminar on Recent Developments in DNA Barcoding RET Species of Peninsular India during August 3rd 2017 [Convener]
4. Two days National Level Workshop & Short-Term Training Programme on Micropropagation and Business Commercialization of Indian medicinal Plants during January 30 -31st, 2017 [Convener & Organizing Secretary]

Events Participated (optional)

Conferences / Seminars / Workshops:

1. Seminars – 5
2. Workshops – 4
3. Conferences - 63

Other Training Programs

1. UGC Refresher course and orientation programme – 5

Overseas Exposure / Visits

Place: Council for chemical, agricultural, Biological and Environment Science, University Putra Malaysia, Malaysia, Kuala Lumpur

Purpose of Visit: International conference on Tentative Budget to attend International Conference on Food Ecology, Waste Management, Cellular and Molecular Biology (FEWCMB – 2017)

Duration: November 20 – 21, 2017

Membership in

1. Member, Board of Studies for MSc and Mphil Botany courses, Alagappa University.
2. Member, Board of Studies, M. Sc., Botany, Alagappa University affiliated Colleges.
3. Chairman, Board of Valuation, M. Sc., and M. Phil. Botany, Alagappa University.
4. Chairman, Question Setting Board, M. Sc., Botany, Alagappa University.
5. University Representative, Distance Education Examinations, Alagappa University.
6. Member, Inspection Squad, Examinations of Alagappa University affiliated Colleges.
7. Member, research centre inspection committee, Alagappa University affiliated Colleges
8. Member, Board of Studies for M.Sc., Life sciences, Tamil Nadu Teachers Education University, Chennai.

Resource persons in various capacities

Number of Invited / Special Lectures delivered: 13 Invited Lectures

S. No	Organized by	Topic	Year	National / International
1.	Central Industrial Security Force (CISF) Amaravathipurur	Introduction to Miyawaki forest methodology and its practical applications	2020	National
2.	Department of Nanoscience and Technology, Alagappa University	Nanotechnology In Biomedical Applications	2019	International

3.	PG and Research Department of Biochemistry	National Seminar on Herbal Drug Development	2017	National
4.	Department of Oceanography and Coastal area Studies, Alagappa University	National Seminar on Current trends and Prospects of Nanomarine science	2014	National
5.	H.H the rajah's college	Nanotechnology	2013	National
6.	Department of Animal Health & Management, Alagappa University	Nano Robots and their applications in Biomedical field	2013	National
7.	Alagappa Botanical Club, Karaikudi	Applications of Nanotechnology	2012	National
8.	K.S.R College of Engineering, Tiruchengode	Biosensor application in electronics	2012	National
9.	K.K. Institute of technology, Coimbatore	AICTE- Sustainable technology for green environment	2011	National
10.	Alagappa engineering college, Karaikudi	DST and DNA based biosensor application in cancer diagnosis	2010	National
11.	STCW, mannargudi	Advancement of Bioinformatics	2010	National
12.	Department of Biochemistry STET Women's College, mannargudi	Bioinformatics and its Applications	2009	National
13.	Department of Oceanography and Coastal area Studies, Alagappa University	National Seminar on Current trends and Prospects of Nano marine science	2009	National

Others

1. Articles published in Newspapers / Magazines: 3
2. Products developed: Nil
3. No. of PhD Thesis evaluated: 6
4. No. of PhD Public Viva Voce Examination conducted: 10
5. Sequences submitted in GenBank- Nil

**Social Interests and Initiatives / Articles in News papers etc can also be included

Research Publications

1. PR. Kaleeswaran, B. Sriram, S.F. Wang, J.N. Baby, A. Arumugam, A.L. Bilgrami, S.A. Hashsham, F.A. Sayegh, C. Liu, Electrochemical detection of antipsychotic drug in water samples based on nano/sub-microrod-like $\text{CuBi}_2\text{-xIn}_x\text{O}_4$ electrocatalysts, *Microchemical journal*, **2021**, ISSN: 0026-265X, **163**, 105886. **I.F:4.82**
2. V. Karthika, M.S. AlSalhi, S. Devanesan, K. Gopinath, A. Arumugam, M. Govindarajan, Chitosan overlaid $\text{Fe}_3\text{O}_4/\text{rGO}$ nanocomposite for targeted drug delivery, imaging, and biomedical applications, *Scientific Reports*, **2020**, ISSN:2045-2322, **10**, 1-17. **I.F: 4.37**
3. C. Balalakshmi, N.S. Alharbi, S. Kadaikunnan, J.M. Khaled, K.F. Alanzi, K. Gopinath, A. Arumugam, M. Govindarajan, Development of chitosan/agar- silver nanoparticles coated paper for antibacterial application, *Green processing and synthesis*, **2020**, ISSN: 2191-9550, **9**, 751-759. **I.F: 2.83**
4. M.A. Ansari, N. Alkubaisi, K. Gopinath, V. Karthika, A. Arumugam, M. Govindarajan, Facile and cost –effective ag nanoparticles fabricated by *Lilium lancifolium* leaf extract: Antibacterial and antibiofilm potential, *Journal of cluster science*, **2019**, ISSN: 1572-8862,**30**, 1081-1089. **I.F: 3.06**
5. V. Karthika, P. Kaleeswaran.K. Gopinath, A. Arumugam, M. Govindarajan, N.S. Alharbie, J.M.Khaled, M. N. Al-anbr, G. Benelli, Biocompatible properties of nano-drug carriers using $\text{TiO}_2\text{-Au}$ embedded on multiwall carbon nanotubes for targeted drug delivery, *Materials Science and Engineering C*, ISSN: 0928-4931,**2018**, **90**, 589-601. **I.F: 7.32**
6. S. Gowri. K. Gopinath, A. Arumugam, Experimental and computational assessment of mycosynthesized CdO nanoparticles towards biomedical applications, *Photochemistry and Photobiology: B*, **180**, **2018**, 166-174 ISSN: 1011-1344. **I.F: 6.25**
7. C. Balalakshmi, G. Rajkumar, V. Balamurugan, V. Krishnan, A. Arumugam, V. Sabitha, K. Gopinath, Preliminary phytochemical Screenings of Marine alga *Ulva fasciata* and its growth performance, biochemical composition on Indian major carp *Cirrhinus mrigala* fingerlings, *Journal of advanced applied scientific research*, **2017**, ISSN: 2454-3225, **1**.
8. C. Balalakshmi, K. Gopinath, M. Govindarajan, R. Lokesh, A. Arumugam, N. S. Alharbi, S. Kadaikunnan, J.M. Khaled, G. Benelli, Green synthesis of gold nanoparticles using a cheap

Sphaeranthus indicus extract: impact on plant cells and the aquatic crustacean *Artemia nauplii*, *Journal of Photochemistry and Photobiology B: Biology*, **2017**, ISSN: **1011-1344**. **173**, **598 -605**,

I.F: 6.25

9. Kasi Gopinath, Natarajan Parimala Devi, Marimuthu Govindarajan, Kasi Bhagyaraj, Shanmugasundaram Kumaraguru, Ayyakannu Arumugam, Naiyf S. Alharbi, Shine Kadaikunnan, Giovanni Benelli. One-pot green synthesis of silver nanoparticles using the orchid leaf extracts of *Anoectochilus elatus*: growth inhibition activity on seven microbial pathogens" *Journal of Cluster Science*. **2017**, ISSN: **1572-8862**, **3**, **1541 – 1550**. **I.F: 3.06**
10. V. Karthika, A. Arumugam, K. Gopinath, P. Kaleeswarran, M. Govindarajan, N. S. Alharb S. Kadaikunnan, J. M. Khaled, G. Benelli, Guazuma ulmifolia bark-synthesized Ag, Au and Ag/Au alloy nanoparticles: Photocatalytic potential, DNA/protein interactions, anticancer activity and toxicity against 14 species of microbial pathogens, *Journal of Photochemistry & Photobiology, B: Biology*, **2017**, **167**, **189–199**, ISSN: **1011-1344**. **I.F: 6.25**
11. K. Gopinath, M. Govindarajan, M. Chinnadurai, N. Parimala Devi, K. Bhagyaraj, S. Kumaraguru, T. Baranisri, A. Sudha, M. Zeeshan, **A. Arumugam**, N.S. Alharbi, S. Kadaikunnan, G. Benelli. One-pot synthesis of dysprosium oxide nano-sheets: antimicrobial potential and cytotoxicity on A549 lung cancer cells. *Journal of Cluster Science*. **DOI:10.1007/s10876-016-1150-4**. **2016**, ISSN Number: **1572-886**. **I.F: 3.06**
12. K. Bhagyaraj, S. Kumaraguru, K. Gopinath, V. Sabitha, PR. Kaleeswarran, V. Karthika, A. Sudha, U. Muthukumar, K. Jayakumar, S. Mohan, A. **Arumugam**, Eco-Friendly Synthesis of Palladium Nanoparticles Using *Melia azedarach* Leaf Extract and Their Evaluation for Antimicrobial and Larvicidal Activities, *Journal of cluster science*, **DOI 10.1007/s10876-016-1114-8**. **2016**, ISSN Number: **1572-8862**. **I.F: 3.06**
13. K.S. Venkatesh, K. Gopinath, N.S. Palani, **A. Arumugam**, Sujin P. Jose, S. Asath Bahadur, R. Ilangovan, Plant pathogenic fungus *F. solani* mediated biosynthesis of Nanoceria: Antibacterial and antibiofilm activity, *RSC advances*, **2016**, **6**, **2016 42720–42729**. ISSN Number: **2046-2069**. **I.F: 3.36**
14. Kasi Gopinath, Shanmugasundaram Kumaraguru, Kasi Bhagyaraj, Subramanian Mohan, Kunga Sukumaran Venkatesh, Masanam Esakkirajan, Periyannan Kaleeswarran, Naiyf S. Alharbi, Shine Kadaikunnan, Marimuthu Govindarajan, Giovanni Benelli, **Ayyakannu Arumugam**, Green synthesis of silver, gold and silver/gold bimetallic nanoparticles using the *Gloriosa superba* leaf

extract and their antibacterial and antibiofilm activities, *Microbial Pathogenesis*, **101**, **2016**, **1-11**.
ISSN Number: 0882 – 4010. **I.F: 3.73**

15. Viswanathan Karthika, **Ayyakannu Arumugam**, Synthesis and characterization of MWCNT/TiO₂/Au NC for photocatalytic and antimicrobial activities. *IET nanobiotechnology*, **DOI: 10.1049/iet-nbt.2016.0072,2016. 2016**, **ISSN Number: 1751 – 8741.** **I.F: 1.84**
16. K. Gopinath, S. Kumaraguru, K. Bhagyaraj, S. Thirumal, **A.Arumugam**. Eco friendly synthesis of TiO₂ Au and Pt doped TiO₂ nanoparticles for dye sensitized solar cell and evaluation of toxicity. *Superlattices and Microstructure*. **2016, 92, 100 -110. ISSN Number: 0749-606.** **I.F: 2.65**
17. M. Latha, M. Sumathi, R. Manikandan, **A. Arumugam**, N.M. Prabhu. Biocatalytic and antibacterial visualization of green synthesized silver nanoparticles using *Hemidesmus indicus* *Microbial pathogenesis*. **2015, 82, 43-49, ISSN Number: 0882-4010,** **I.F: 3.73**
18. K. Gopinath, C. Karthikeyan, A.S.Haja Hameed, K. Arun Kumar, **A. Arumugam**. Phytochemical Synthesis and Crystallization of Sucrose from the Extract of *Gloriosa superba*. *Research Journal of Phytochemistry*. **2015, 9, 144-160, ISSN Number: 2151-6081.**
19. K. Gopinath, V. Karthika, C. Sundaravadivelan, S. Gowri, **A. Arumugam**. Mycogenesis of cerium oxide nanoparticles using *Aspergillus niger* culture filtrate and their applications for antibacterial and larvicidal activities, *Journal of Nanostructure in Chemistry*, **5, 2015, 295-303, ISSN Number: 2193-8865.** **I.F: 6.39**
20. **A. Arumugam**, C. Karthikeyan, A.S.Haja Hameed, K.Gopinath, S.Gowri, V. Karthika. Synthesis of cerium oxide nanoparticles using *Gloriosa superba* L. Leaf extract and their structural, optical and antibacterial properties, *Materials Science and Engineering C*, **2015, 49, 408-415, ISSN Number: 0928 – 4931.** **I.F: 7.32**
21. K. Gopinath, **A. Arumugam**. Extracellular Mycosynthesis of Gold Nanoparticles Using *Fusarium solani*. *Applied Nanoscience*, **2014, 4, 657-662. ISSN Number: 2190-5509.**
22. K. Gopinath, V. Karthika, S. Gowri, **A. Arumugam**. In Vitro Morphogenetic Regeneration From Root Explant Of *Gloriosa superba* L. For The Enhanced Crop Production. *The Scitech Journal*, **2014, 1, 30-33. ISSN Number: 2278 – 5329.**
23. K. Gopinath, S. Gowri, V. Karthika, **A. Arumugam**. Green synthesis of gold nanoparticles from fruit extract of *Terminalia arjuna*, for the enhanced seed germination activity of *Gloriosa superba*. *Journal of Nanostructure in Chemistry*, **2014, 4, 115, ISSN Number: 2193-8865.** **I.F: 6.39**

24. K. Gopinath, V. Karthika, S. Gowri, V. Senthilkumar, S. Kumaresan, **A. Arumugam**. Antibacterial activity of ruthenium nanoparticles synthesized using *Gloriosa superba* L. leaf extract. *Journal of Nanostructure in Chemistry*, **2014, 4, 83**, ISSN Number: **2193-8865**.
I.F: 6.39
25. K. Gopinath, K. S. Venkatesh, R. Ilangoan, K. Sankaranarayanan, **A. Arumugam**. Green synthesis of Gold nanoparticles from leaf extract of *Terminalia arjuna*, for the enhanced mitotic cell division and pollen germination activity. *Industrial Crops and Products*, **2013, 50, 737-742**.
ISSN Number: 0926 – 6690. I.F: 5.64
26. K. Gopinath, C. Sundaravadivelan, A. Arumugam. Green synthesis, characterization of silver, gold and bimetallic nanoparticles using bark extract of *Terminalia arjuna* and their larvicidal activity. *International Journal of Recent Scientific Research*, **2013, 4, 904-910**. **ISSN Number: 0976- 3031**.
27. K. Gopinath, S. Gowri, **A. Arumugam**. Phytosynthesis of silver nanoparticles using *Pterocarpus santalinus* leaf extract and their antibacterial properties, *Journal of Nanostructure in Chemistry*, **2013, 3, 68**. **ISSN Number: 2193-8865. I.F: 6.39**
28. **A. Arumugam**, K. Gopinath. In vitro regeneration of an endangered medicinal plant of *Withania somnifera* using four different explants. *Plant Tissue Cult. & Biotech*, **2013, 23, 79-85**, **ISSN Number: 1818-8745**.
29. K. Gopinath, V. Senthil kumar, **A. Arumugam**, S. Kumaresan. Antimicrobial activity of extracellular metabolite of endophytic fungi *Phomopsis* spp. isolated from four different medicinal plants of India. *Journal of Applied Biology and Pharmaceutical Technology*, **2013, 4, 40-46**, **ISSN Number: 0976- 4550**.
30. K. Gopinath, **A. Arumugam**. Effect of Temperature and pH on the *Gloriosa superba* L. pollen fertility. *Advanced Bio Tech*, **2012, 12, 15-18**. **ISSN Number: 2319 -6750**.
31. K. Gopinath, **A. Arumugam**. Micropropagation and in vitro micro rhizome initiation of *Gloriosa superba* L. (an endangered medicinal plant). *Asian Pacific Journal of Tropical Biomedicine*, **2012, 1, 1-6**, **ISSN Number: 1995 – 7645**.
32. **A. Arumugam**, K. Gopinath. In vitro Micropropagation using Corm Bud Explant: An Endanger Medicinal Plant of *Gloriosa superba* L. *Asian Journal of Biotechnology*, **2012, 4, 120-128**, **ISSN Number: 1996- 0700**.
33. **A. Arumugam**, K. Gopinath, M. Muthukumaran, M. Jayaseelan, R. Abilas, M. Shaghul Hameet.

Studies on Freshwater Algal Biodiversity from Kanchipuram Temple Ponds. *Advanced Bio Tech*, **2012, 11, 17-19. ISSN Number: 2319 – 6750.**

34. **Arumugam, K. Gopinath.** In-vitro Callus Development of Different Explants used for Different Medium of *Terminalia arjuna*. *Asian Journal of Biotechnology*, **2011, 3, 564-572, ISSN Number: 1996- 0700.**
35. **A. Arumugam, K. Gopinath.** Micro propagation and tissue culture of the endangered medicinal plant *Withania somnifera* by the direct shoot and root initiation method. *Journal of Applied Biology and Pharmaceutical Technology*, **2011, 2, 315-321. ISSN Number: 0976- 4550.**
36. **A. Arumugam, Gopinath.** Differential In vitro Morphogenetic Response in Shoot Tip, Hypocotyl and Cotyledon Segments of *Phyllanthus amarus* L. *Advanced Bio Tech*, **2011, 11, 11-14, ISSN Number: 2319 – 6750.**
37. S.P. Kamala Nalini, P. Saravanan, **A.Arumugam**, D. Lalithakumari. A novel bacterium for biocontrol and plasmid mediated antibiosis. *Asian journal of microbial biotech, Env,Sc*, **2008, 2, 301-308. ISSN Number: 0972 – 3005.**
38. S.P. Kamala Nalini, P. Saravanan, **A.Arumugam**, D. Lalithakumari. Chemotaxis and colonization – A positive approach for effective biocontrol by *Pseudomonas chlororaphis* .*Asian journal of microbial Biotech. Env. Sc.* **2008, 2, 251-255. ISSN Number: 0972 – 3005.**