

Resume



Dr. M. Michael Babu, M.Sc., Ph.D.

Assistant Professor

Centre for Marine Science and Technology

Manonmaniam Sundaranar University

Rajakkamangalam – 629 502.

Tamilnadu, India.

E.mail: michaelmsu@live.com; michael@msuniv.ac.in

Phone: Office: +91-4652-253078

Mobile: +91-9443731640

Academic Qualifications	<p>1. B.Sc Botany - 1987 (Gold Medalist) Madurai Kamaraj University.</p> <p>2. M.Sc.Biology(Specialization–Industrial Microbiology)-1989 School of biological Sciences, Madurai Kamaraj University, Madurai, Tamil Nadu</p> <p>3. Ph. D.Aquaculture, 1999. Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu.</p>
Teaching Experience	<p>From September 1999- At present</p> <p>17 years (Marine Biotechnology and Marine Microbiology and Aquaculture)</p>
Research Experience	<p>27 Years</p>
Awards & Grants	<p>Grant: NATP, DBT, IFS, UGC, DST</p> <p>Award: Academic Excellence Award -By M.S.University</p> <p>IFS Award (International Foundation for Science, Sweden) Awarded for the formulation of Maturation Diet for Spent <i>Penaeus monodon</i></p>

Current Research Areas	Marine Biotechnology & Marine Microbiology <ul style="list-style-type: none"> • Screening and characterization of antimicrobials from micro and macro plants • Herbal principles induced reproduction in crustaceans • Probiotic control of bacterial pathogen in shrimp hatchery system • Breeding and Hatchery development of selected fin and shell fishes. • Extraction and Characterization of algal oil for pharmaceutical use • Plankton research
Languages	Tamil, English
Scientific Memberships	<ol style="list-style-type: none"> 1. Life Member-Marine Biological Association of India 2. Member in Applied Psychological Society of India 3. Life Member and Secretary - Indian Society for Planktology 4. Member in Aquaculture Engineering Society. 5. Life Member and Secretary - BIOCAPE (Biologist Association For Ecological Conservation and Public Education)
Interests	<ul style="list-style-type: none"> • Establishing a Centre for Microalgal strain collection for India in CMST, MS University • Establishing a multispecies Hatchery in CMST, MS University
Skills	Aquaculture, Herbal Products, Artemia - induced cyst production, Molecular Taxonomy of Microalgae, Algal Oil Production and Utilization, Herbal Maturation Products, Control of Viral and Bacterial Diseases of Shrimp, Shrimp Larviculture, Phytoplankton, Secondary Metabolites, Breeding and Hatchery development of selected fin and shell fishes.
EXPERIENCES Teaching Experience	1990 – 1992 Algal curator , I.F.S. Project, M. K. University, Madurai, Tamil Nadu, India. 2000 -2007 Lecturer in Microbiology , Centre for Marine Science and Technology, M.S. University, Rajakkamangalam - 629502, Tamil Nadu, India.

	Since 2007 - Assistant Professor , Centre for Marine Science and Technology, M.S. University, Rajakkamangalam - 629502, Tamil Nadu, India.
Research Experience	<p>a. Pre Doctoral Research experience in the area of Marine Biotechnology from January 1992 to July 1996 in CMST, M.S. University, Rajakkamangalam</p> <p>b. Research Associate from 1999 to 2000 in DOD Project, Institute for Coastal Area Studies, M.S. University, Tirunelveli, Tamil Nadu, India.</p> <p>c. Post Doctoral research experience in the field of Marine Microbiology and Marine Biotechnology from October 2000 to till date in CMST, M.S. University, Rajakkamangalam.</p>
Industrial Experience	1996 - 1999 - Technical Manager , Oceanic Shrimping Limited, Chennai, Tamil Nadu, India
RESEARCH GUIDANCE	<p>a. Ph.D. Awarded :10(Completed -Main Guide -8, Co-Guide -2 Ongoing-8)</p> <p>b. M. Phil. Guided: 52 candidates</p> <p>c. M. Sc. Guided: 45 candidates</p>
Editor	1. Journal of Marine Sciences (American Journals Group) – Scientific and Academic Publishers, USA
Peer reviewer of Journals	<p>1. Journal of Aqua cultural Engineering. Elsevier Publication, The Netherlands</p> <p>2. Scientific Transaction and Technological Innovation. International Journal from India</p> <p>3. Journal of Bioresource Technology – Elsevier Publication</p> <p>4. Journal of Marine Sciences (American Journals Group) – Scientific and Academic Publishers, USA</p>

RESEARCH PROJECTS

Major Research Projects Completed/ Ongoing

S. No	Title of the project	Name of the funding agency	Duration	Remarks
1	International Chief Investigator Screening, characterization and application of bioactive plant products for Broodstock maturation enhancement in <i>Penaeus monodon</i> Grant F. NO/3291-1&2/2004	International Foundation for Science (IFS), Sweden project(16 lakhs),	2004-2006& 2006-2009	Completed
2	National- Co-Principal Investigator Evolving, breeding and larviculture technology for the grouper <i>Epinephalusthavina</i> by applying heterospecific insemination techniques and ayurvedic products. Grant No. 25 (1) /2000 - ATP/LGP-II/223	NATP - ICAR - project – Rs.40 Lakhs	2000-2004	completed
3	Co-Principal Investigator Artemia Biomass and Cyst production in solar salt pans. Grant no. BT /PR2555/ AAQ/ 03/124/2001	DBT project – 20 Lakhs,	2001-2004	completed
4	Principal Investigator Development of antimicrobial product from plants and microalgae for treating shrimp bacterial pathogens by conventional antibiotics Grant No: F. No. 37-272/2009 (SR)	UGC project Rupees 13,86,300/-	2010-2013	completed

5	Co-Investigator Development of Antiviral and Immunostimulant drugs from medicinal plants against the shrimp white spot syndrome virus (WSSV) for suitable shrimp species Grant No: F. No. 37-27/2009 (SR)	UGC project Rupees 8,86,800/-	2010-2013	completed
6	Co-Investigator Development of Hatchery and Farming Technologies for Indian Spiny Lobsters Grant No:F. No. 33-382/2007 (SR)	UGC Major Research Project Rs.1200000/-	2009-2011	completed
7	Co-Investigator Isolation and characterization of bioactive compounds from the marine bacteria associated with the molluscs of Kanaykumari Coast Grant No:F. No39-294/2010 (SR)	UGC 10.31 Lakhs	2011-2014	completed
8	Co-Investigator Isolation of novel antibiotics against methicillin resistant <i>Staphylococcus aureus</i> (MRSA) Grant No:F. No.41-519/2012(SR)	UGC Rs.13.27 lakhs	2012-2015	Completed
9	Co-Investigator Characterization and production of pharmacologically important biosurfactants from halophilic microbes Grant No: SR/SO/HS-0161-2012	DST SERB 10.78 Lakhs	2014-2016	Completed
10	Coordinator UGC- Innovative Course Post graduate Diploma in Plantonology Grant No: 14-13(B)/2012(Inno/ASIST)	UGC 11 th Plan Rs.45 lakh	2012-2016	Completed

List of significant publication

1. **Babu M. M.** and M. P. Marian (1998). Live transport of gravid *Penaeus indicus* in coconut mesocarp dust., *Aquacultural Engineering. Elsevier Science Publication*, 18: 149 - 155.**Impact Factor:2.04**
2. **Babu, M.M.** and M. P. Marian, (2000). Factors determining spawning success in *Penaeus monodon*. *NAGA, ICLARM, Aquabyte section* , Vol.24 No.1 & January-june 2001 pp13-15.
3. **Babu M.M.**, M. P. Marian and M. R. Kitto (2001) A cradle aeration system for hatching *Artemia*. *Aquacultural Engineering, Elsevier Science Publication*, 24: 85 - 88.**Impact Factor: 2.04**
4. **Babu, M.M.**, M.R. Kitto and M. P. Marian (2001). Growth performance, Salinity tolerance and Nutritive values of Marine microalgae, *Skeletonema costatum* in the Brackish waters of Bukinham Canal, Nellore, India, *Aquaculture in the tropics* 16(2) ; 113 - 130.
5. **Babu, M.M.**, M.R. Kitto, and M. P. Marian (2001). Shrimping-footprints on the sands of time, *Current Science*, Vol. 80, No. 11 pp. 101 - 102. **Impact Factor: 0.54**
6. Kitto M. R., C. Regunathan and **M. M. Babu** (2001). Shrimp culture in Derelict salt pans - A neglected priority. *Fishing chimes* vol. 20: 10 – 11.
7. **Babu, M.M** and M. Peter Marian (2001) Development of Bioencapsulated Herbal Products for Maturation and Quality larval Production in *Penaeus monodon* (L.). Larvi 2001, *European Aquaculture society special Publication no .30, Belgium*. PP 41-43.
8. Citarasu, T., R. Raja JeyaSekar, **M.M.Babu** and M. P. Marian, 2002 Developing *Artemia* enriched herbal diet for producing quality larvae in *Penaeus monodon*, *Asian Fisheries Science* **15**:21-32.**Impact Factor: 1.23**
9. Citarasu T., K. Venkatramalingam, **M. M Babu**, R. Raja JeyaSekar, and M. Peter Marian (2003) Influence of the antibacterial herbs, *Solanum trilobatum*, *Andrographis paniculata* and bacterial load of *Penaeus monodon* post larvae. *Aquaculture International*, 11: 583-595.**Impact Factor: 1.037**
10. Sivaram. V., **M. M. Babu**, G. Immanuel, S. Murugadass, T. Citarasu, M. P. Marian (2004) Growth and immune response of juvenile greasy groupers (*Epinephelus tauvina*) fed with herbal antibacterial active principle supplemented diets against *Vibrio*

*harveyi*infections. *Aquaculture* 237, 9-20.**Impact Factor: 2.77**

11. Immanuel G., A. Palavesam, V. Sivaram, **M. M. Babu**, M. P. Marian (2004) Feeding trashfish *odonus niger* lipid enriched *Artemia* nauplii on growth, stress resistance and HUFA requirements of *Penaeus monodon* postlarvae. *Aquaculture* 237, 301-313.
Impact Factor: 2.77
12. **M. Michael Babu**, 2007. Nutraceuticals for Rotifer Enrichment, *Fishing Chimes*. Vol:27 No: 6.pp. 42-43.
13. G.Immanuel, T. Citarasu, V.Sivaram, **M.Michael Babu**, and A. Palavesam . 2007. Delivery of HUFA, probiotics and biomedicine through bioencapsulated *Artemia* to enhance the growth, survival and reduce the pathogenicity in shrimp *Penaeus monodon* postlarvae. *Aquaculture International*, Vol. 15 (2) pp.137-152. **Impact Factor: 1.037**
14. S. M. J. Punitha, **M. M.Babu**, G. Immanuel.2007. Developing feed for the culture of brine shrimp *Artemia franciscana* using marine algae as major dietary source. *Roumanian Biotechnological letters*, Vol.12 (4): 3313-3328. **Impact Factor:0.56**
15. Punitha, S. M. J., **M.M. Babu**, V. Sivaram, V. S. Shankar, S.A. Dhas, T. C. Mahesh, G. Immanuel and T. Citarasu, 2007, Immunostimulating influence of Herbal Biomedicines on non-specific immunity in Grouper *Epinephelus tautoga* Juvenile Against *Vibrio harveyi* Infection, *Aquaculture International*, **16:511–523. Impact Factor: 1.03**
16. **Babu, M.M.**, V. Sivaram, G. Immanuel, T. Citarasu, S.M.J. Punitha,(2008). Effects of Herbal Enriched Artemia Supplementation over the Reproductive Performance and Larval Quality in Spent Spawners of the Tiger Shrimp (*Penaeus monodon*), *Turkish Journal of Fisheries and Aquatic Sciences* 8: 301-307.**Impact Factor: 0.71**
17. **Babu, M.M.**, G. Immanuel., T. Citarasu., S. M. J .Punitha ., S.A. Dhas., V. S. Shankar, R.Arul and T. Selvaraj,(2009). Advances in microfilter for defecation and feeding of Artemia in shrimp hatcheries, *Fishing Chimes*, 29: 2.
18. T. Selvaraj, **M. M. Babu**, S. G. Prakash Vincent, T. Citarasu, S. Mary Josephine Punitha, S. Albin Das, V. Selva Shankar and A. P. Lipton.(2009). Mutagenetic Study on Chitinase producing Chi-a Gene from *Chromobacterium* sp. Strain C-61 expressed in *Escherichia coli* XL-1 Blue. *International Journal of Biotechnology and Biochemistry* 5: 1: 63-84.**Impact Factor: 0.57**

19. G. Immanuel, R. P. Uma, P. Iyyappa Raj, T. Citarasu, S. M. Punitha Peter, **M.M. Babu** A. Palavesam (2009). Dietary medicinal plant extracts improve growth, immune activity and survival of tilapia (*Oreochromis mossambicus*). *Journal of Fish Biology*, Vol. 74, 146-1475. **Impact Factor: 1.519**
20. T. Selvaraj, **M.M.Babu**, S. G. Prakash Vincent, T. Citarasu and S. Albindas (2010). Screening of estuarine AM fungi in soils of Rajakkamangalam estuary and sequencing of native dominant *G. geosporum* showing salinity tolerance activity. *Bioresearch Bulletin* 2: 51-58.
21. S. Velmurugan; S. M. Josephine Punitha, **M. M. Babu**, T. Selvaraj, T. Citarasu. (2010). Indian Herbal Medications to Replace Antibiotics for Shrimp *Penaeus monodon* post larvae. *Journal of Applied Aquaculture*, 22: 3, 230 - 239. **Impact Factor: 0.42**
22. Albin Dhas, S., **Michael Babu, M.**, Mary Josephine Punitha, Citarasu, T. and Selvaraj, T. (2010). A trial study on hormone induced spawning and biochemical changes in *Etroplus suratensis*. *Engineering and Technology in India* 1(2): 74-78.
23. Albin Dhas, S., **Michael Babu, M.**, Selvaraj, T., Citarasu, T., Huxley, V. A. J. and Mary Josephine Punitha, S. (2010). Influence of Hormone Induced Spawning in *Etroplus suratensis*. *Journal of Theoretical and Experimental Biology*, 6 (3): 187-193.
24. Kumaran, T, **M.M.Babu**, Selvaraj T., Albin Dhas, Citarasu, T. (2010). Production of Anti WSSV IgY edible antibody using herbal immunoadjuvant *Asparagus racemosus* and its immunological influence against WSSV infection in *Penaeus monodon*, *Journal of Aquaculture Feed Science and Nutrition*, 2 (1): 1-5.
25. Citarasu, T, Alfred Dhas, K., Velmurugan, S., Thanga Viji, V., Kumaran, T., **M.M.Babu** and Selvaraj, T. (2011). Isolation of *Aeromonas hydrophila* from infected ornamental fish hatchery during massive disease outbreak. *International Journal of Current Research* Vol. 2, Issue, 1, pp. 037-041. **Impact Factor: 7.086**
26. Subramanian Velmurugan, Stanly Mary Josephine Punitha, **M. Michael Babu**, Thangasamy Selvaraj, Thavasimuthu Citarasu, 2010. Select of Indian antibacterial medicine characteristics herbal to replace antibiotics for shrimp *Penaeus monodon* post larvae, *Journal of Applied Aquaculture*; 22: 230-239. **Impact Factor: 0.42**

27. Aswathy Gopalakrishnan Heineining Nair, Maria ThasonBirdilla Selva Donio, Vijaya Raghavan Thanga Viji, **M.Michaelbabu** and ThavasimuthuCitarasu, 2010. Isolation from coconut retting effluent of *Bacillus cereus*TC-2 antagonistic to pathogenic Vibrios, *Ann Microbiol.*, 61, 3: 631-637. **Impact Factor: 1.23**
28. **Michael Babu, M.**, Kitto, M. R., Selvaraj, T., Citarasu, T., Punitha, M. J., and Albin Dhas,S. 2011.Batch Production of Rotifer in a Photo-Bio Reactor. *Fishing Chimes*, 31 (8): 46-50.
29. Thanga Viji, V., **Michael Babu, M.**, Velmurugan, S, Kumaran, T., Anand, S. B., Gunasekaran, P. and T. Citarasu, 2011. Virulence Factors and Molecular cloning of Outer Membrane Protein (OMP) gene from virulent *Aeromonas hydrophila*isolated from infected gold fish *Carassius auratus*, *Bangladesh J Microbiol*, 28, 2:70-75.
30. Subramanian Velmurugan, VijayaragavanThangaviji, **Mariavinent Michael Babu**, Mary Josephine Punitha, ThavasimuthuCitarasu, 2012.Antimicrobial effect of *Calotropis procera* active principles against aquatic microbial pathogens isolated from shrimp and fishes, *Asian Pacific Journal of Tropical Biomedicine*, Volume 2, Issue 2, Supplement, February 2012, Pages 812-817.**Impact Factor: 2.60**
31. VijayaragavanThangaviji, **M. Michaelbabu**, SettyBalakrishnan Anand, Paramasamy Gunasekaran, ThavasimuthuCitarasu, Protective 2012. Immunization with*Aeromonas* OMPprovides protection against *Aeromonas hydrophila* in Goldfish *Carassius auratus*, *Journal of Microbial & Biochemical Technology*, 4:2, 045-049.**Impact Factor: 0.59**
32. Yogeewaran, A., Velmurugan , S., Punitha, S.M.J., **Michael Babu, M. M.**, Selvaraj, T., Kumaran, T. and T. Citarasu2012. Protection of *Penaeus monodon* against White Spot Syndrome Virus by inactivated vaccine with herbal immunostimulants, *Fish and Shellfish immunology*,Jun;32(6):1058-67. **Impact Factor: 3.282**
33. Raja Rajeswari, P., Velmurugan, S., **Michael Babu, M.**,Kesavan , K. and T. Citarasu 2012. A Study on the Influence of Selected Indian herbal Active principles on enhancing the immune system in *Fenneropenaeus indicus* against *Vibrio harveyi* infection, *Aquaclut. Int.* Volume 20, Issue 5, pp 1009–1020.**Impact Factor: 1.037**
34. Velmurugan, S, **Michaelbabu, M.**, SettyBalakrishnan Punitha, S.M.J., Thangaviji, V, and Citarasu, T, 2012. Screening and Characterization of antiviral compounds from *Psidium guajava* Linn root bark against White spot syndrome virus. *Indian Journal of*

Natural Products and Resources, 3(2): 208-214. **Impact Factor:0.72**

35. Velmurugan,S., K. Raman, V. Thanga Viji, M. B. S. Donio, J. Adlin Jenifer, **M. Michaelbabu**, T. Citarasu, 2012. Screening and characterization of antimicrobial secondary metabolites from *Halomonassalifodinae* MPM-TC and it's *in vivo* antiviral influence on Indian White shrimp *Fenneropenaeus indicus* against WSSV infection, *Journal of King Saud University –Science*Volume 25, Issue 3, July 2013, Pages 181–190.
36. Citarasu , T.,**Michaelbabu, M.**, Zhou, L., Yang, W. and J. F. Gui, 2013. cDNA cloning and expression of Vitamin-k Epoxide Reductase (VKOR) gene from orange spotted grouper *Epinepheluscoioides*, *Indian Journal of Geo-Marine Sciences*Vol. 42(5), September 2013, pp1-7.**Impact Factor:0.17**
37. Thanga Viji, V., K. Deepa, S. Velmurugan, M. Birdilla Selva Donio, J. Adlin Jenifer **M.Michael Babu**, T. Citarasu, 2013. Vaccination strategies to protect goldfish *Carassius auratus* against *Aeromonas hydrophila* infection, *Diseases in Aquatic Organism, Dis. Aquat Organ.* 2013 Apr 29;104(1):45-57.**Impact Factor: 2.71**
38. Donio, M.B.S., S.F.A. Ronica V. Thanga Viji, S. Velmurugan, J. A. Jenifer, **M.Michaelbabu**, P. Dhar and T. Citarasu, 2013. Halomonas sp. BS4, A biosurfactant producing halophilic bacterium isolated from solar salt works in India and their biomedical importance, *Springer Plus*,2:149.**Impact Factor: 0.982**
39. M. B. S. Donio, S. F. A. Ronica, V. Thanga Viji, S. Velmurugan, J. Adlin Jenifer, **M. Michael Babu**, T. Citarasu,2013,Isolation and characterization of halophilic *Bacillus sp* BS3 able to producing pharmacologically important biosurfactants, *Asian pacific Journal of Tropical Medicine* VVolume 6, Issue 11, November 2013, Pages 876-883.**Impact Factor: 1.225**
40. Narmatha, K., V. Thangaviji, S. Velmurugan, M. B. S. Donio, J. Adlin Jenifer, **M. Michael Babu**, T. Citarasu, 2013. Carotenoid producing *Salinicoccus*sp. NS1:a moderately halophilic bacterium isolated from sea anemone *Anthopleura sp.*, *Blue Biotechnology Journal* 1: 4.
41. Jenifer, J.A., M. B. S. Donio, V. Thangaviji, S. Velmurugan, **M. Michael Babu**, S.A. Dhas, T. Citarasu, 2013. Halo-alkalliphilic actinomycetes from solar salt works in India:

diversity and antimicrobial activity, *Blue Biotechnology Journal*, Volume 2, Number 1, 138-151.

42. **Michael Babu M**, Citarasu T, Selvaraj T, Punitha S. M. J, Praba, Albin dhas S (2013). Extraction and characterization of alga from selected marine microalgae and the role of associated bacteria on fatty acid profile. *International Journal of Natural and Applied Sciences*, Vol. 2, Issue 4, Sep 2013, 31-42.
43. Selvendran M, **Michael Babu M**. (2013). Studies on Novel bacteriocin like inhibitory substance (BLIS) from microalgal symbiotic *Vibrio* spp MMB2 and its activity against aquatic bacterial pathogens. *Journal of Applied Pharmaceutical Science* Vol. 3 (2), pp. 169-175, February, 2013. **Impact Factor: 0.649**
44. Chelladurai Subbiahanadar, Subramanian Karthikeyan, Mariathason Velmurugan, Selva Birdilla, Donio, **Mariavinent Michael Babu**, Thavasimuthu Citarasu 2014: Studies on the antimicrobial potential and structural characterization of fatty acids extracted from Sydney rock oyster *Saccostrea glomerata*. *Annals of Clinical Microbiology and Antimicrobials*; 13(1). **Impact Factor: 1.23**
45. Paulraj Anusha, Vijayaragavan Thangaviji, Subramanian Velmurugan, **Mariavinent Michael Babu**, Thavasimuthu Citarasu, 2014. Protection of ornamental gold fish *Carassius auratus* against *Aeromonas hydrophila* by treating *Ixora coccinea* active principles. *Fish & Shellfish Immunology* 36, 485-493. **Impact Factor:**
46. Yesurethinam Sarafin, Mariathason Birdilla Selva Donio, Subramanian Velmurugan, **Mariavinent Michael Babu**, Thavasimuthu Citarasu 2014: *Kocuria marina* BS-15 a biosurfactant producing halophilic bacteria isolated from solar salt works in India. *Saudi Journal of Biological Sciences*; 21(6). **Impact Factor: 2.564**
47. Francis Bindhu, Subramanian Velmurugan, Mariathason Birdilla Selva Donio, **Mariavinent Michael Babu**, Thavasimuthu Citarasu 2014: Influence of *Agathi grandiflora* active principles inhibit viral multiplication and stimulate immune system in Indian white shrimp *Fenneropenaeus indicus* against white spot syndrome virus infection. *Fish & Shellfish Immunology*; 41(2). **Impact Factor: 3.282**
48. N. Viju, S. Sharmin Vini, C.V. Sunjaiy Shankar, **M. Michael Babu**, T. Citarasu and S. Mary Josephine Punitha, 2014. Isolation and Characterization of Antimicrobial Compound from *Bacillus* sp. Associated with Gastropods. *Journal of Pure and Applied*

Microbiology, volume 8(1) PP:1-6.**Impact Factor:0.16**

49. **Mairavinent Michael Babu**, Ajithamol A, Shajithamol A, Venkatesh B, Michael Babu M.3 Saraswathi S, Bipin k jha(2014): Phytoplankton Density in Comparison with Monthly Variation of Hydro biological Parameters in Manakudy Estuary, South West Coast of India. *International Research Journal of Environment Sciences* 2319–1414 Vol. 3(10), 24-31. **Impact Factor: 0.675**
50. Saraswathi Mohan S., Bipin Kumar Jha, Ajitha Mol A. And **Michael Babu M.** 2014: Probiotics from Artemia and its application on controlling the bacterial pathogens in aquaculture system. *International Journal of Pharma and Bio Sciences* Oct; 5(4): (B) 1168 – 1172. **Impact Factor: 6.268**
51. S. Velmurugan, N. Jerin, **M. Michael Babu**, F. Bindhu, S. Albin Dhas, T. Citarasu 2014: Screening and characterization of antiviral compounds from *Enteromorpha flexuosa* against white spot syndrome virus (WSSV) and its in vivo influence on Indian white shrimp *Fenneropenaeus indicus*. *Aquaculture International*; 23(1). **Impact Factor: 1.037**
52. Gopal P, T. Citarasu, S.M.J. Punitha, T. Selvaraj, S. Albindas, A.S. Sindhu and **M. Michael Babu** 2014. Influence of Physical and Nutritive Parameters on Population and Size Variation in Two Species of Rotifer. *J. Aqua Trop.* Vol. 29, No. (3-4), Pages 121-134.
53. **Michael Babu. M,** T.Citarasu, T.Selvaraj, S.M.J.Punitha and S.Albin Dhas(2014). Isolation and Identification of pathogenic *Enterococcus sp* from Artemia Population from puthalam salt pan of Kanyakumari District, India. *Journal of Aquaculture in the Tropics*. 29 (3-4) PP 101-120.
54. S. Velmurugan, N. Jerin, **M. Michael Babu**, F. Bindhu, S. Albin Dhas, T. Citarasu 2014. Screening and characterization of antiviral compounds from *Enteromorpha flexuosa* against white spot syndrome virus (WSSV) and its in vivo influence on Indian white shrimp *Fenneropenaeus indicus* Aquacult Int. **Impact Factor: 1.037**
55. Sangeetha V.S ; Michael Babu , Beena Lawrence 2014. Phytochemical Analysis of *Annona Reticulata L.* Leaf Extracts. *International Research Journal of Pharmaceutical and Applied Sciences (IRJPAS)* 4(5):4-8.

56. MBS Donio, V Thanga Viji, J Adlin Jenifer, S Velmurugan, K Raman, **M Michael Babu**, T Citarasu (2014)Antagonistic *Bacillus cereus* TC-1 Isolated from Solar Salt Work in Southern India.; *Journal of Microbial and Biochemical Technology*29(1).
Impact Factor: 0.59
57. John Selesteen Charles Adlin Jenifer, MariathasonBirdilla Selva Donio, **MariavinentMichaelbabu**, Samuel Gnana Prakash Vincent and ThavasimuthuCitarasu, 2015. Haloalkaliphilic *Streptomyces* spp. AJ8 isolated from solar salt works and its' pharmacological potential *AMB Expr (2015) 2-12*.
58. Selvaraj Thangaswamy, BangeppagariManjunatha, Juan Palo Suarez, **Michael Babu**, Gopal Ponnuswamy, G Venkata, Subba Reddy, SelvanayagamMariadoss2015: Phytoremediation of tannery effluent polluted soils of Dindigul, Tamil Nadu, using Arbuscular mycorrhizal fungi inoculated*Azadirachta indica*. *Journal of Chemical and Pharmaceutical Research*, 7(7):905-914.
59. S. Velmurugan , P. Palanikumar , P. Velayuthani , M. B. S. Donio , **M. Michael Babu** , C. Lelin , S. Sudhakar , T. Citarasu, 2015. Bacterial White Patch Disease caused by *Bacillus cereus*, a new emerging disease in semi intensive culture of *Litopenaeusvannamei*,*Aquaculture*.
60. S Albin Dhas, T Selvaraj, T Citarasu, Josephine Punitha, **M. Michael Babu** (2015) Effect of supplemented diet with maturation plant extract on reproductive performance of*Etroplus suratensis*.; *Journal of Aquaculture Report*58-62.**Impact Factor:2.26**
61. T. Citarasu, **M. Michaelbabu** V. N. Vakharia2015: Influence of *Cyperus rotundus* Active Principles Inhibit Viral Multiplication and Stimulate Immune System in Indian White Shrimp *Fenneropenaeus indicus* against White Spot Syndrome Virus Infection,World Academy of Science, Engineering and Technology International, *Journal of Biological, Biomolecular, Agricultural, Food and Biotechnological Engineering* Vol:9, No:4.**Impact Factor:**
62. Ajithamol A,**Michael Babu M**, Venkadesh B, Saraswathi S, Praba T (2016).Assessment of Hydrobiological Parameters in Manakudy Estuary, South west coast of india.*International Research Journal of Biological Sciences* Vol. 5(3), 46-50.**Impact Factor: 0.676**

63. Ajithamol, Venkadesh, **Michael Babu**, S. Saraswathy (2016).Impacts of Nutrients Nitrogen, Phosphorus, Potassium and their Role in the Sediment of Manakudy Estuary, Tamilnadu, S. India.*International Journal of Current Research* Vol. 8, Issue, 04, pp.29248-29251.**Impact Factor: 7.086**
64. Ajithamol, **Michael Babu**, Saraswathy, B. Venkadesh2016: A Study on the Role of Microbial Diversity and their Interferences with the Ecosystem of Manakudy Estuary. *International Journal of Current Research*. Vol. 8, Issue, 04, pp.29244-29247.**Impact Factor: 7.086**
65. Praba.T, Ajan.C, Citarasu.T, Selvaraj. T , Albin Dhas .S, Gopal. P ,**Michael Babu. M**, 2016. Effect of Different Culture Media for the Growth and Oil Yield in Selected Marine Microalgae .*J. Aqua Trop*. Vol. 31, No. (3-4), Pages 165-177.
66. **Michael Babu M**, Kavitha. P, Citarasu. T, Albin Dhas. S And Selvaraj T 2016. Herbal Antimicrobials also induce the Resistant Bacterial Strain Development - A Preliminary Study in Comparison With Commercial Antibiotics. *J. Aqua Trop*. Vol. 31, No. (1-2), Pages 31-49.
67. George Aldous Jenin, **Mariavincet Michael Babu**, ManavalanMurugan, ThanigaimalaiMurugan 2016. Isolation and Identification of Chitinase Producing Native Fungi from Saltpan of Puthalam, Kanyakumari District, Tamil Nadu, India.*Journal of Applied Biology & Biotechnology* Vol. 4 (03), pp. 001-005.
68. Sangeetha V.S, Beena Lawrence, **Michael Babu. M** 2016. In vitro screening of *Annona Reticulata l.* pericarp for antimicrobial activity. *Int. Journal of Applied Sciences and Engineering Research*, Vol. 5(6), 465-467.
69. Blessy G, Ajan C, Citarasu T and **Michael Babu M** 2017. Effect of Algal Oil Incorporated Diet on Growth Biochemical and Immunological Response in Ornamental Fish *Danio rerio rerio*. *J Aquaculture Research and Development*, 8:4, page. 1-9.**Impact Factor: 2.66**
70. Viswanathan S, **Michel Babu M**, Reena.T 2017. Eutrophication - A Life Threat To Environment. *International Journal of Environmental Biology*; 7(1): 1-4.**Impact Factor: 0.697**

71. Mariathason Birdilla Selva Donio, Subbiahanadar Chelladurai Karthikeyan, **Mariavinent Michaelbabu**, Ganapathi Uma, Ramaiyan Raja Jeya Sekar, Thavasimuthu Citarasu 2018. *Haererehalobactersp.* JS1, a bioemulsifier producing halophilic bacterium isolated from Indian solar salt works. Journal of Basic Microbiology. 58(7), PP 597-608. **Impact Factor: 2.66**
72. Pandi Palanikumar, Dani Joel Daffni Benitta, Chinnadurai Lelin, Eswaramoorthy Thirumalaikumar, **Mariavinent Michaelbabu**, Thavasimuthu Citarasu, 2018. Effect of *Argemone mexicana* active principles on inhibiting viral multiplication and stimulating immune system in Pacific white leg shrimp *Litopenaeus vannamei* against white spot syndrome virus. Fish and Shellfish Immunology. 75, PP 243–252. **Impact Factor: 3.37**
73. Thankamani Kumaran, Eswaramoorthy Thirumalaikumar, Chinnadurai Lelin, Pandi Palanikumar, **Mariavinent Michaelbabu**, Thavasimuthu Citarasu, 2018. Physicochemical properties of anti *Vibrio harveyi* egg yolk antibody (IgY) and its immunological influence in Indian white shrimp *Fenneropenaeus indicus*. Fish and Shellfish Immunology. 74, PP 349–362. **Impact Factor: 3.37**
74. John Selestee Charles Adlin Jenifer, **Mariavinent Michaelbabu**, Chinnadurai Lelin, Eswaramoorthy Thirumalaikumar, Selva Raj Jeraldin Nisha, Ganapathi Uma, Thavasimuthu Citarasu, 2019. Antimicrobial potential of haloalkaliphilic *Nocardiopsis sp.* AJ1 isolated from solar salterns in India. Journal of Basic Microbiology, 59(3), PP 288-301. **Impact Factor: 2.66**
75. Thavasimuthu Citarasu, Chinnadurai Lelin, Eswaramoorthy Thirumalaikumar, **Mariavinent Michael Babu**, Vikram N. Vakharia., 2019. *Macrobrachium rosenbergii* nodavirus (MrNV)-CP-RNA-2 DNA vaccine confers protective immunity in giant freshwater prawn *Macrobrachium rosenbergii* against MrNV infection. Fish and Shellfish Immunology. 86, PP 319–326. **Impact Factor: 3.37.**
76. Thavasimuthu Citarasu, Chinnadurai Lelin, **Mariavinent Michael Babu**, Setty Balakrishnan Anand, Abel Arul Nathan, Vikram N. Vakharia, 2019. Oral vaccination of *Macrobrachium rosenbergii* with baculovirus-expressed M. rosenbergii nodavirus (MrNV) capsid protein induces protective immunity against

MrNV challenge. Fish and Shellfish Immunology.86 PP 1123–1129. **Impact Factor:3.37.**

- 77.Ajan Chellappan¹, Praba Thangamani¹, Shyni Markose¹, Selvaraj Thangaswamy¹, Uma Ganapathi, CitarasuThavasimuthu, **Mariavinent Michael Babu**, 2020. Development of Alternative Technology for the Long-term Storage of Microalgal Stock Culture in Fish Hatcheries. J Aquac Res Development, Vol. 11 Iss. 4 No: 585. **Impact Factor:0.37**
- 78.AjanChellappana, PrabaThangamania, ShyniMarkosea, CitarasuThavasimuthub, Selvaraj Thangaswamy, **Mariavinent Michaelbabu**,2020.Long-term Preservation of Micro-algal Stock for Fish Hatcheries. Aquaculture Report ,17.**Impact Factor: 2.12**
<https://doi.org/10.1016/j.aqrep.2020.100329>. **Impact Factor: 2.66**
- 79.PandiPalanikumar, DinamellaWahjuningrum, ParamachandranAbinaya, **Mariavinent Michael Babu**&ThavasimuthuCitarasu, 2020.Usage of plant natural products for prevention and control of white feces syndrome (WFS) in Pacific white leg shrimp Litopenaeusvannamei farming in India.Aquacult International, DOI 10.1007/s10499-019-00448-5 **Impact Factor:1.75**
- 80.Biju,Y, M. Krishnaveni, **M. Michael Babu** , S. Krishnakumar,2020. Influence of Physiological Parameters on Artemia Population in Solar Salt pans of Kanyakumari District, Tamil Nadu, India. International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 03. **Impact Factor:0.8**
- 81.**M. Michael Babu**, T. Praba , T. Citarasu, T. Selvaraj, S. Albindhas, P. Gopal and C. Ajan, 2020.Factors Determining Oil Yield in Selected Marine Bacillariophyceae.J. Aqua Trop. Vol. 34, No. (1-2) 2019, Pages 45-72.
- 82.ShyniMarKose, AjanChellappan, PrabaThangamani, Subilal George, Selvaraj Thangaswamy, CitarasuThavasimuthu,**MariavinentMichael Babu**,2020. Optimization of physical parameters for the growth and lipid production in Nannochloropsisgaditana (Lubian, 1982).Journal of Applied Biology & Biotechnology Vol. 8(03), pp. 6-12.DOI: 10.7324/JABB.2020.80302.
83. Ganapathi Uma · Mariavinent Michael Babu · Vincent Samuel Gnana Prakash · Selvaraj Jeraldin Nisha · Thavasimuthu Citarasu,2020.Nature and bioprospecting of haloalkaliphilics: a review.World Journal of Microbiology and Biotechnology- 36:66

<https://doi.org/10.1007/s11274-020-02841-2>. **Impact Factor:2.80.**

84. Biju. Y, M. Krishnaveni, Mariavincen Michael Babu ,S. Krishnakumar,2020. INFLUENCE OF PHYSICOCHEMICAL PARAMETERS ON ARTEMIA POPULATION IN SOLAR SALTPANS OF KANYAKUMARI DISTRICT, TAMILNADU, INDIA.. International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 03, 2020 ISSN: 1475-7192.

85. Sajeet Bhavya , Ganapathi Uma, **Mariavincen Michael Babu** and Elanchezhiyan Manickan,2021. Anti-hepatitis B activity of methanolic extracts of *Achyranthes aspera* leaves. European Journal of Molecular & Clinical Medicine ISSN 2515-8260 Volume 8, Issue 11.

Chapters in Books

- 1.** M. Rufus Kitto and **M. Michael Babu** (1998). Farmers Hand Book on Shrimp Larval Diseases. CABRUD Publication, Chennai, India
- 2.** M. Rufus Kitto and **M. Michael Babu** (2000). Operational Manual for solar roof Reactor. CABRUD Publication, Chennai, India.
- 3.** **Babu M.M.**, S. Lazarus and M. P. Marian (2001). Commercial production systems for marine microalgae. Manual on trends in Marine Biotechnology, ICAS Publication, No. 3, M. S. University, India, pp. 140 - 156.
- 4.** M. P. Marian, J. A. C. John, G, Immanuel and **M. Michael Babu**, 2001. Methods in Marine Biotechnology. M. S. University Publication, India.
- 5.** **M. Michael Babu** and M. Peter Marian (2006). Handbook for Artemia Farming in Salt Pans. Dept of Biotechnology, Govt. of India –BT/PR2555/AAQ/03/ 124/2001, New Delhi, India **15.**
- 6.** **M. Michael Babu**, T. Citarasu, 2017. Practical Manuel on Microalgal Technology. ISBN - 81-86660-29, Southern Book Star Publishers, Trivandrum.
- 7.** Citarasu, Tand **M. Michael Babu**. **2017.** Marine Pollution and its Impacts on Living Organisms, In: Biotechnology for Sustainability Achievements, Challenges and Perspectives, Biotech Sustainability. ISBN: 978-967-14475-3-6.

Training / Seminar Organized

1. **Co-Organizer** -Three days International conference on Food resources, Production and Processing Technology, at IART, M.K.University, Muttom., During December 28-30,1991.
2. **Co-organizer** – Three days International conference on Advanced Technologies in fisheries and Marine Sciences, ICAS, M.S. University, S.C.College campus , Nagercoil. 2002.
3. **Co- organizer** – Two days National seminar on “Biomedicine in Aquaculture” at CMST, M.S. University, during 17&18 March 2006.
4. **Co-organizer** - Two days National workshop on “Perspective in Marine Biotechnology”, organized by CMST, M.S. University, Rajakkamangalam during 19th and 29th March 2010.
5. **Co-organizer** - Two days National Tamil conference on “Arivial Tamil” at VivekananthaKenthra, Kanyakumari, jointly organized by Tamilnadu State Tamil ArivialMantram and CMST, M.S. University, during 7 and 8 October 2010
6. **Organizing Secretary** – Two days National Workshop on Statistical Application in Biology UGC XI plan Merged Scheme, CMST, M.S.University, Rajakkamangalam2011
7. **Organizing Secretary** – Fourday National Training Programme on Microalgal Technology, funded by UGC under UGC Innovative Programme, CMST, M.S. University, Rajakkamangalam during 04th - 07th April 2017.

Details of Professional Training

1. Training of Brackish water shrimp farming - conducted at Ramnad by the Marine Products Export Development Authority of India (MPEDA), Thanjavur. 11 - 15 April 1991.
2. Training on Hatchery operation and management conducted at Cochin by the Marine Product Export Development Authority of India (MPEDA), Cochin, 27 April - 29 May, 1992.
3. Training on shrimp spawners conducted by MPEDA, Thanjavur, 10 - 12 August 1993.
4. Training course on "Diagnostic methodologies in shrimp pathology" conducted by Luxe Enterprises Ltd., Ping Tung, Taiwan at Aquamarine Centre, Nellore, A.P., India from 14 Feb 1997 to 21st May 1997.

5. Participated in the DBT sponsored National Level short term Training course on “Aquatic Biotechnological Techniques” , Organised by Fisheries Biotechnology Centre, Fisheries College and Research Institute, TANVAS, Tuticorin, during 6-20th Dec.2007.
6. Participated in the ICAR sponsored 21 days Winter school on “Recent advances in Breeding and Larviculture of Marine Finfish and Shellfish” Organised by CMFRI, Cochi, Kerala during 29th December 2008 to 19th January 2009.
7. Participated in the National workshop on Marine Science – A Focus on Curriculum/ Syllabi Enrichment, organized by Manonmanian Sundaranar University, Abishekapatti on 25-26 March 2013.
8. Participated in 2 days National Level Training Programme on Biodiversity of Marine Plankton sponsored by MHRD conducted by Annamalai University, Parangipettai on March 6-7, 2014.
9. Participated in 5 days National Level Training Programme on Training and Demonstration in Seaweed Farming sponsored by National Fisheries Development Board, conducted by Annamalai University, Parangipettai on December 1-5, 2014.
10. Participated in 1 days National Level seminar cum workshop on Biodiversity Conservation, CMST, M.S. University, Rajakkamangalam during 25th February 2015.
11. Participated in 1 days National Level Training Programme on Bioprospecting potential of Marine Ascidians sponsored by MHRD, conducted by Annamalai University, Parangipettai on 11th March, 2016.
12. Participated in the one day training on High Impact Teaching Skills, Organized by, Manonmanian Sundaranar University, Tirunelveli on 19 July 2017.

Coordinator

1. Marine Science tech Education Programme for (K-12) School students and Teachers, CMST, MS University, Rajakkamangalam.
2. Post Graduate Diploma in Planktonology, UGC Innovative Programme, CMST, MS University, Rajakkamangalam.

Extension work / Community services

1. **Secretary – BIOCAPE** (Biologist Association for Ecological Conservation and Public Education), Nagercoil
2. **Secretary – Provision** (Co coordinating NGO s in Kanyakumari District)
3. **Scientific Advisor –CABRUD** (Center for Advanced Biotechnology for Rural Development), Chennai

Industrial Collaboration

1. D.C.W. Tuticorin – for Artemia production and Spirulina culture along with Dr. Peter Marian
2. Oceanic Shrimping Ltd, Chennai (Training and placement for Students)
3. Nice salt company, Puthalam- Establishment of Artemia cyst production in the salt pan.
4. Tri sea shrimp Hatchery, Chettikulam- for student’s Training – carrying out IFS project, Sweden.

National & International Conferences Participated - 36

Resource Person in College and University (Invited Talk - 17)

Gene Bank Submissions	45
Google Scholar ID	Citations : 843, h-index : 13, i10-index : 15 https://scholar.google.co.in/scholar?hl=en&q=Dr.M.Michael+Babu&oq=michael
Research Gate ID	Citations : 754, h-index : 13, RG Score : 23.37 https://www.researchgate.net/profile/Mariavinent_Babu
Scopus ID	https://www.omicsonline.org/author-profile/Mariavinent_Michael_Babu/
Linked In ID	https://in.linkedin.com/in/michael-babu-8a575535?trk=prof-samename-name
Michael Babu University Profile ID	http://www.msuniv.ac.in/Profile/CMST/Dr.M.Michael%20Babu.pdf

I, M. Michael Babu, certify that the above curriculum vitae is current and accurate to the best of my knowledge

Date:24-07-2020

Rajakkamangalam

(M. Michael Babu)