


Name of Faculty	<b>Dr. Dharmalingam K</b>		
Designation	Assistant Professor		
Nature of Job/Appointment	Regular		
Date of Joining	27-09-2021		
E-mail	dharmalingam_biotech@cbit.ac.in dharmamtech2013@gmail.com		
Education Qualifications	Name of the Degree	Class	
Ph. D.	Chemical Engineering	Awarded	
M.Tech.	Industrial Biotechnology	First (Distinction)	Class
B.Tech.	Industrial Biotechnology	First (Distinction)	Class
Work Experience			
Teaching	02 years		
Research	06 years (Including Ph.D.)		
Industry	--		
Others	--		
Area of Specialization	Hydrogel technology, Biomaterials, Nanomedicine, Drug solubility, Microwave synthesis and Food packaging films		
Professional Memberships	--		
Responsibilities held at Institution Level	--		
Responsibilities held at Department Level	<ol style="list-style-type: none"> <li>1. Student Inter Institute participations / Home Institute participation</li> <li>2. Weak student identification and Remedial classes</li> <li>3. Alumni coordinator</li> <li>4. ISO Associate Coordinator</li> <li>5. Internships dept level coordinator</li> <li>6. Mentor for students</li> <li>7. Internships dept level coordinator</li> <li>8. Course Expert Group member</li> <li>9. Guest Lectures</li> <li>10. Honors degree 2021 admitted batches coordinator</li> </ol>		
Research Guidance	--		
Awards Received	<ol style="list-style-type: none"> <li>1. Recipient of Ministry of Human Resource &amp; Development (MHRD) scholarship for pursuing Ph.D. (2015 – 2020) in Indian Institute of Technology Guwahati (IITG).</li> <li>2. Received Young Scientist Award for the project entitled “Mushroom Culture – A beneficial training” in 2002 by Regional Institute of Education, Mysuru (a constituent unit of NCRET, New Delhi).</li> </ol>		
Courses Handled at Under Graduate / Post Graduate Level.	<ol style="list-style-type: none"> <li>1. Microbiology</li> <li>2. Industrial Biotechnology</li> <li>3. Downstream Processing</li> <li>4. Biochemistry</li> <li>5. Molecular Biology</li> <li>6. Animal Biotechnology</li> <li>7. Genetic engineering</li> <li>8. Environmental Biotechnology</li> </ol>		

9. Microbiology Laboratory
10. Biochemistry Laboratory
11. Instrumentation Laboratory

No. of Papers Published	National Journals – Nil	International Journals – 15
	National Conference – Nil	International Conference – 1
Projects Carried out		--
Patents		--
Technology Transfer		--
Invited Speaker		--

No. of Books/Chapter Published with details	<ol style="list-style-type: none"> <li>1. K. Dharmalingam, R. Anandalakshmi, Polysaccharide Based Films for Food Packaging Applications, <i>Advances in Sustainable Polymers: Processing and Applications</i>, Springer Nature, 2019, 183-207. DOI: <a href="https://doi.org/10.1007/978-981-32-9804-0_9">https://doi.org/10.1007/978-981-32-9804-0_9</a>.</li> <li>2. K. Dharmalingam, Abhishek Roy, R. Anandalakshmi, Essential oil in Active Food Packaging System, <i>Biopolymer-Based Food Packaging: Innovations and Technology Applications</i>, John Wiley &amp; Sons, Inc. (in press).</li> <li>3. Abhishek Roy, K. Dharmalingam, R. Anandalakshmi, Silver and ZnO Nanoparticles in Food Packaging, <i>Biopolymer-Based Food Packaging: Innovations and Technology Applications</i>, John Wiley &amp; Sons, Inc. (in press).</li> </ol>
Details of Short-Term Training Programs/Faculty Development Programs/Seminars/Workshops/Other Trainings ( <b>Attended and/or Organized</b> ).	<ol style="list-style-type: none"> <li>1. K. Dharmalingam and R. Anandalakshmi, Influence of citric acid on NaCMC-HPMC-ZnO hydrogel films for wound healing applications, <i>International Conference on Advanced Materials Research (AMRC 2019)</i>, September 26, 27, 2019, National University of Singapore (NUS), Singapore.</li> <li>2. K. Dharmalingam and R. Anandalakshmi, Rapid microwave-assisted synthesis and characterization of zinc-sulfate-calcium-phosphate/cellulose bionanocomposites, <i>International Conference on Nanoscience and Technology (ICONSAT 2016)</i>, Feb 29 – March 2, 2016, IISER, Pune</li> <li>3. K. Dharmalingam and R. Anandalakshmi, Solid dispersion of quercetin in HPMC matrix by microwave irradiation, <i>Sophisticated Instruments in Modern Research, ICSIMR-2017</i>, 30th June &amp; 1st July, 2017, Indian Institute of Technology Guwahati, Assam</li> <li>4. K. Dharmalingam and P. Mullai, Growth optimisation of marine microalgae <i>Nannochloropsis</i> sp. using response surface methodology in the <i>International Conference on Recent trends in Agriculture and Biotechnology</i>, Department of Biotechnology, Adhiyamaan College of Engineering, 26-27<sup>th</sup> February, 2015, Hosur, Tamil Nadu</li> <li>5. K. S. Yoha, R. S. Saranya, P. Sathiyarosini, K. Dharmalingam, A study on antibacterial activity of methanolic leaf extract of <i>Andrographis paniculata</i> in the <i>International Conference on Novel Trends in Biotechnology and Pharmaceutical Applications</i>, Department of Biotechnology, Adhiyamaan College of Engineering, 18-19<sup>th</sup> March, 2014, Hosur, Tamil Nadu</li> <li>6. K. Dharmalingam and P. Mullai, Extraction of oil from marine microalgae for biodiesel production in the 3<sup>rd</sup> National conference on Challenges in Biochemical Engineering and</li> </ol>

Biotechnology for Sustainable Environment, Department of Chemical Engineering Annamalai University, 2<sup>nd</sup> April, 2014, Chidambaram, Tamil Nadu

7. Attended AICTE sponsored 14 days Faculty Development Program on “ Applications of Nanotechnology in Diagnostic and Therapeutic Procedures (ANDTP) 2013”, held on 15<sup>th</sup> – 29<sup>th</sup> November 2013, organized by the Department of Biotechnology, Vel Tech High Tech Dr. Rangarajan Dr. Sakunthala Engineering College, Avadi, Chennai.
8. Attended TEQUIP II sponsored seven days Faculty Development Program on “Principles of Bioreactor Engineering” organized by Bharathidasan Institute of Technology, Tiruchirappalli from 16.12.2013 to 22.12.2013.
9. K. Dharmalingam and P. Mullai, Microalgae to Enhance Lipid Content for Biodiesel Production in the “International Conference on Science and Technology for Clean and Green Environment” at Zoology Wing, Annamalai University, 27-28<sup>th</sup> July, 2012, Chidambaram, Tamil Nadu
10. K. Dharmalingam and P. Mullai, Transesterification of Microalgae Oil into Biodiesel in the “National Conference on Environment, Biodiversity and bioethics- current trends and future perspectives” at Department of Zoology, Annamalai University, 23-24<sup>th</sup> March, 2012, Chidambaram, Tamil Nadu.
11. K. Dharmalingam, 2<sup>nd</sup> International Conference on Challenges in Biotechnology and Food Technology” at Department of Chemical Engineering, Annamalai University, Annamalai Nagar – 608002 on 9-10<sup>th</sup> January, 2012, Chidambaram, Tamil Nadu
12. K. Dharmalingam and P. Gopinath, Artificial Skin Using Cell Culture in the “National Conference on Current trends in Biotechnology” at Department of Biotechnology, Kamaraj College of Engineering and Technology, 26-27<sup>th</sup> February, 2009, Virudhunagar, Tamil Nadu.

Details of Journal Publications/  
Conferences (National and International) Details provided below

#### International Journal

1. Jahnu Saikia, K Dharmalingam, R Anandalakshmi, Amay S Redkar, Venu Bhat, Vibin Ramakrishnan, 2021. Electric Field Modulated Peptide based Hydrogel Nanocatalyst. *Soft Matter*, Accepted (IF - 3.67). DOI: <https://doi.org/10.1039/D1SM00724F>
2. Mrinal Bhowmik, K. Dharmalingam, Sayan Haldar, P. Muthukumar and R. Anandalakshmi, 2021. Fabrication, characterization and evaluation of desiccant doped hydrogel films for potential air-dehumidification applications. *Journal of Applied Polymer Science*, Accepted (IF – 3.12). DOI: <https://doi.org/10.1002/app.51607>.
3. K. Dharmalingam and R. Anandalakshmi, 2020. Functionalization of cellulose-based hydrogel films with zinc oxide complex and grapefruit seed extract for potential applications in treating chronic wounds. *Polymer*, 202:122620 (IF – 4.43).
4. K. Dharmalingam, R. Anandalakshmi and Shashank Shekhar, 2020. Microwave-induced solid dispersion of curcumin in HPMC matrix using water as hydration carrier. *Journal of Dispersion Science and Technology*, 42:1419-1430 (IF – 1.7).
5. K. Dharmalingam, Devivasha Bordoloi, Ajaikumar B. Kunnumakkara and R. Anandalakshmi, 2020. Preparation and characterization of cellulose-based nanocomposite hydrogel films containing CuO/Cu<sub>2</sub>O/Cu with antibacterial activity. *Journal of Applied Polymer Science*, 137:e49216 (IF – 3.12).
6. K. Dharmalingam, Devivasha Bordoloi, Ajaikumar B. Kunnumakkara and R. Anandalakshmi, 2020. Formation and characterization of zinc oxide complexes in composite hydrogel films for potential wound healing applications. *Polymer Composites*, 41:2274-2287 (IF – 2.26).
7. Aditya Koneru\*, K. Dharmalingam\* and R. Anandalakshmi, 2020. Cellulose based nanocomposite

- hydrogel films consisting of sodium carboxymethylcellulose – grapefruit seed extract nanoparticles for potential wound healing applications. *International Journal of Biological Macromolecules*, 148:833-842. (\*Equal contribution) (IF – 6.95).
8. K. Dharmalingam and R. Anandalakshmi, 2019. Fabrication, characterization and drug loading efficiency of citric acid crosslinked NaCMC-HPMC hydrogel films for wound healing drug delivery applications. *International Journal of Biological Macromolecules*, 134:815-829 (IF – 6.95).
  9. K. Dharmalingam, Ganesan Padmavathi, Ajaikumar B. Kunnumakkara and R. Anandalakshmi, 2019. Microwave-assisted synthesis of cellulose/zinc-sulfate-calcium-phosphate (ZSCAP) nanocomposites for biomedical applications. *Materials Science & Engineering C*, 100:535–543 (IF – 5.88).
  10. Pankaj Jha, K. Dharmalingam, Takahisa Nishizu, Nakako Katsuno and R. Anandalakshmi, 2019. Effect of amylose-amylopectin ratios on physical, mechanical and thermal properties of starch based bionanocomposite films incorporated with CMC and nanoclay. *Starch-Stärke* 72(1-2):1900121 (IF – 2.22).
  11. M.K. Yogeswari, K. Dharmalingam, K. and P. Mullai, 2019. Implementation of artificial neural network model for continuous hydrogen production using confectionery wastewater. *Journal of Environmental Management*, 252:109684 (IF – 6.78).
  12. K. Dharmalingam, D. Pamu and R. Anandalakshmi, 2018. Comparison of solid state synthesis of zinc calcium phosphorous oxide (ZCAP) ceramics under conventional and microwave heating methods. *Materials Letters*, 212:207-210 (IF – 3.42).
  13. Hasan, G. Waibhaw, S. Tiwari, K. Dharmalingam, I. Shukla and L.M. Pandey, 2017. Fabrication and characterization of chitosan, polyvinylpyrrolidone, and cellulose nanowhiskers nanocomposite films for wound healing drug delivery application. *Journal of Biomedical Materials Research Part A*, 105(9):2391-2404 (IF – 3.52).
  14. K. Dharmalingam, M. K. Yogeswari, K. S. Yoha, R. S. Saranya, P. Sathiyarosini and M. Suganya, 2015. In vitro characterization of antibacterial activity of *Cataranthus roseus*. *International Journal of Life Science and Pharma Research*, 5(2):72-77.
  15. M. K. Yogeswari, K. Dharmalingam, P. Ronald Ross and P. Mullai, 2015. Role of iron concentration on hydrogen production using confectionery wastewater. *Journal of Environmental Engineering*, 142(9):C4015017 (IF – 1.65).

#### **International Conferences**

1. Mrinal Bhowmik, Sayan Halder, K. Dharmalingam, R. Anandalakshmi, P. Muthukumar, Evaluation of Thermo-Kinetic and Absorption Characteristics of Pure Desiccants and Desiccant Mixtures, 10<sup>th</sup> International Conference on Materials Processing and Characterizations (ICMPC-2020), February 21-23, 2020. *Materials Today: Proceedings*: <https://doi.org/10.1016/j.matpr.2020.02.430>.