

Faculty profile



Name	Dr. M. I. Ahymah Joshy
Designation	Assistant Professor
Department	Chemistry
Date of Birth	19.03.1982
Date of Appointment	01.07.2025

Area of Specialization : Biomaterials, Nanotechnology & Polymer composites for drug delivery and tissue engineering applications.

Personal Affiliation : Environmental study committee member, Eco club waste water management and Green campus committee member, Unnat Bharat Abhiyan committee member.

Academic Records

COURSE	INSTITUTION	YEAR OF PASSING	SUBJECT TAKEN	MARKS
Ph.D.	Anna University, Chennai – 600 025	2011	Chemistry	Degree awarded
M.Sc.	St. Joseph's College, Tiruchirappalli, Bharathidasan University	2005	Chemistry	64.54
B.Sc.	Holy Cross College, Nagercoil, Manonmaniam Sundaranar University	2003	Chemistry	69.50
XII	Board of Higher Secondary Examination, Tamil Nadu	2000	Physics, Chemistry, Botany, Zoology, Tamil, English	80.58

X	Board of Secondary Education, Tamil Nadu	1998	Science, Mathematics, Social science, Tamil, English	85.40
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Title of Ph.D thesis:

“Synthesis of nano hydroxyapatite and its polymer composites for drug delivery and tissue engineering applications”

Academic Award:

- ❖ National Doctoral Fellowship (NDF) by All India Council for Technical Education (AICTE), India from 2007-2009.
- ❖ Nature India have highlighted one of my work as ‘Research Highlight’ under the title “Nanorods to kill bugs, cancer” and it was published online on 23 June 2011, doi:10.1038/nindia.2011.88.
- ❖ Best poster presentation award (second) during XXI National conference of the society, January 6-8, 2012.
- ❖ Best paper award (oral) in the International conference on Biomaterials Implant Devices and Tissue Engineering, January 6-8, 2012.

Membership

- **Life member of the Society for Bio-Materials and Artificial Organs-LM539**

Conference / workshop:

Category	Conference		Workshops	
	International	National	International	National
Paper presented	08	02	-	-
Participated	06	04	04	10

Publications in National/International Journals

First Author Papers

1. **Ahymah Joshy, M. I.**, Elayaraja, K., Suganthi, R.V. and Narayana Kalkura, S. "Mineralization of oriented nano hydroxyapatite in photopolymerized polyacrylamide gel matrix", *Cryst. Res. Technol.*, Vol. 45, No. 5, pp. 551-556, 2010. I.F=1.9
2. **Ahymah Joshy, M. I.**, Elayaraja, K., Suganthi, R.V., Sarath Chandra Veerla and Narayana Kalkura, S. "In vitro sustained release of amoxicillin from lanthanum hydroxyapatite nanorods" *Curr. Appl. Phys.*, Vol.11, pp. 1100-1106, 2011. I.F=3.1
3. **Ahymah Joshy, M. I.**, Elayaraja, K., Shakthivel, Shanthini, Sarath Chandra, V and Narayana Kalkura, S. "Freeze dried cross linking free biodegradable composites with microstructures for tissue engineering and drug delivery application", *Mater. Sci. Eng. C*, Vol. 33, pp. 466-474, 2013. I.F=7.9
4. **Ahymah Joshy, M. I.**, Vani, R., Tamil selvan, A., Suganthi, R. V., Sankaran, K and Narayana Kalkura, S. "Synthesis of Lanthanum (La³⁺) doped Hydroxyapatite", *Archives of Bio Ceramics Research Volume 8*, Proceeding of the Asian Bioceramics 2008, Chennai, India, 4-6 Nov. (2008).
5. **Ahymah Joshy, M. I.**, Elayaraja, K., Suresh Kumar, V., Abinaya Sindhu, P., Asokan, K., Narayana Kalkura, S. "Investigations on the effect of swift heavy silicon ion irradiation on hydroxyapatite", *Materials Today-Proceedings*, Vol 58., pp 802-811., 2022. I.F=1.503

Co-Author Papers

6. Elayaraja, K., **Ahymah Joshy, M. I.**, Suganthi, R.V., Narayana Kalkura, S., Palanichamy, M., Ashok, M., Sivakumar, V.V., Kulriya, P.K., Sulania, I., Kanjilal, D. and Asokan, K. "125MeV Si⁹⁺ ion irradiation of calcium

phosphate thin film coated by rf-magnetron sputtering technique”, Appl. Surf. Sci., Vol. 257, pp. 2134–2141, 2011. I.F=6.9

7. Suganthi, R.V., Elayaraja, K., **Ahymah Joshy, M. I.**, Sarath Chandra, V., Girija, E. K., and Narayana Kalkura, S. “Fibrous growth of strontium substituted hydroxyapatite and its drug release” Mater. Sci. Eng. C, Vol. 31, pp. 593-599, 2011. I.F=7.9
8. Girija, E. K., Parthiban, S. P., Suganthi, R. V., Elayaraja, K., **Joshy, M. I. A.**, Vani, R., Kularia, P., Asokan, K., Kanjilal, D., Yokogawa, Y. and Narayana Kalkura, S. “High energy irradiation a tool for enhancing bioactivity of hydroxyapatite”, JCS-Japan, Vol. 116, No. 2, pp.320-324, 2008. I.F=3.7
9. Sarath Chandra, V., Ganga Baskar., Suganthi, R. V., Elayaraja, K., **Ahymah Joshy, M. I.**, Sofi Beaula, W., Mythili, R., Ganesh Venkatraman., and Narayana Kalkura, S. “Blood compatibility of iron-doped nanosize hydroxyapatite and its drug release”, Appl. Mater. Inter., Vol. 4, pp. 1200-1210, 2012. I.F=8.2
10. Elayaraja, K., Rajesh, P., **Ahymah Joshy, M. I.**, Sarath Chandra, V., Suganthi, R.V., Kennedy, J., Asokan, K., Avasthi, D. K., Kanjilal, D., Varma, H. K., Narayana Kalkura, S. “Enhancement of wettability and antibiotic loading/release on surface modified by 100 MeV Ag⁷⁺ ion irradiation on hydroxyapatite thin film”, Mater. Chem. Phy., Vol. 134, pp. 464-474, 2012. I.F=4.7
11. Sarath Chandra V, Elayaraja K, Suganthi R.V, **Ahymah Joshy, M.I**, Sulania I, Kulriya P.K, Asokan K, Kanjilal D, Narayana Kalkura S, ‘Effect of irradiation of Si⁵⁺ ion on Fe doped hydroxyapatite, Adv. Mat. Lett., Vol. 4(3), 2013. I.F=0.5
12. Elayaraja, K., Sarath Chandra, V., **Ahymah Joshy, M. I.**, Suganthi, R.V., Asokan, K., Avasthi, D. K., and Narayana Kalkura, S. “Nanocrystalline biphasic resorbable calcium phosphate (HAp/ β -TCP) thin film prepared by electron beam evaporation technique”, Appl. Surf. Sci., Vol. 274, pp. 203-209, 2013. I.F=6.9

13. Elayaraja K, Suganthi R.V, **Ahymah Joshy M.I**, Thanigaiarul K, Sarath Chandra V and Narayana Kalkura S “Raman and Photoluminescence analysis of Irradiated Calcium Phosphate based Bio- Ceramics, Bulletin of Indian Laser Association, Vol. 23, No.1, April 2012.
14. Vani, R., **Ahymah Joshy, M. I.**, Suganthi, R. V and Narayana Kalkura, S, “Habit modification of nano hydroxyapatite using ethylene glycol”, Archives of Bio Ceramics Research Volume 8, Proceeding of the Asian Bioceramics 2008, Chennai, India, 4-6 Nov. (2008)
15. Elayaraja, K., **Ahymah Joshy, M. I.**, Thanigai Arul, K., Manoj Kumar, P., Ramesh Babu, N., Ashok, M., Sivakumar, G. R., Asokan, K., Narayana Kalkura, S. “Effect of swift heavy silicon ion irradiation on TiO₂ prepared by micro arc oxidized technique”, Materials Today- Proceedings, Vol. 58, pp. 932-941, 2022. I.F=1.503

Patent Published

1. Indian Patent on Title “A Hierarchical Ternary Electrocatalyst comprising Zinc Indium Sulfide, Nickel Cobalt Oxide and Mxene (Ti₃C₂T_x) and a process for the preparation Thereof for electrochemical water splitting Applications”. Name of Inventor : 1) Dr. Thirumala Rao Gurugubelli 2) Dr. Sarath Chandra Veerla 3) **Dr. M. I. Ahymah Joshy**. Application No.202641054141 A, Publication Date : 15/05/2026

Books Published

1. Text Book of Pharmaceutical Organic Chemistry-III, (According to latest syllabus of B Pharm-IV Semester of Pharmacy Council of India), Authors : Dr. Raka Kalpesh Chandrakant, Dr. Surwase Kumar Pralhadrao, Dr. R. Betsy Clarebel, Mr. Ashok A. Chopane, **Dr. M. I. Ahymah Joshy**

Papers Presented/Accepted in International conferences

1. **Ahymah Joshy, M. I.**, Vani, R., Prakash Parthiban, S., Suganthi, R. V., Girija, E. K., Tamil Selvan, A., Sankaran, K and Narayana Kalkura, S. "Protein binding to synthesized hydroxyapatite", International conference on New Horizons in Biotechnology, National Institute for interdisciplinary science and technology (CSIR) and biotech research society (BRSI), Trivandrum on 26th to 29th November, 2007.
2. **Ahymah Joshy, M. I.**, Vani, R., Tamil Selvan, A., Suganthi, R. V., Sankaran, K and Narayana Kalkura, S. "Synthesis of Lanthanum (La³⁺) doped hydroxyapatite", International conference on Eight Asian Bioceramics Symposium (ABC 2008) organized by Dept. of Metal. & Mater. Engg., Indian Institute of Technology, Madras, Chennai on 4th to 6th November, 2008.
3. **Ahymah Joshy, M. I.**, Elayaraja, K and Narayana Kalkura, S. "In Vitro drug release of amoxicillin from lanthanum doped hydroxyapatite", International conference on nanomaterials and nanotechnology organized by Centre for Nano Science and Technology, K. S. Rangasamy College of Technology, India on 13th to 16th December, 2010.
4. **Ahymah Joshy, M. I.**, Elayaraja, K., Sarath Chandra, V and Narayana Kalkura, S. "Degradable (Gelatin and Agarose) hydroxyapatite scaffolds prepared by freeze-dryer for drug release and tissue engineering application, 4th Indo-Australian conference on Biomaterials, Tissue Engineering and Drug Delivery Systems organized by Sardar Patel University, Vallabh Vidyanagar, Gujarat, India on 10th to 12th February, 2011.
5. Vani, R., **Ahymah Joshy, M. I.**, Suganthi, R. V and Narayana Kalkura, S. "Habit modification of nano hydroxyapatite using ethylene glycol", International conference on Eighth Asian Bioceramics Symposium organized by Dept. of Metal.& Mater. Engg. IIT, Madras, Chennai on 4th to 6th November, 2008.
6. Elayaraja, K., **Ahymah Joshy, M. I.**, Suganthi, R. V., Vani, R., Sarath Chandra, V., Ganesan, K., Epple, M and Narayana Kalkura, S. "Investigation of antibiotic and anti-cancer drug release from nano-hydroxyapatite agarose/composite" 4th Indo-Australian conference on Biomaterials, Tissue Engineering and Drug Delivery Systems organized by Sardar Patel University, Vallabh Vidyanagar, Gujarat, India on 10th to 12th February, 2011.
7. Suganthi, R. V., Elayaraja, K., **Ahymah Joshy, M. I.**, Sarath Chandra, V., Girija, E. K and Narayana Kalkura, S. "Fibrous growth of strontium substituted hydroxyapatite and its drug release", 4th Indo-Australian

conference on Biomaterials, Tissue Engineering and Drug Delivery Systems organized by Sardar Patel University, Vallabh Vidyanagar, Gujarat, India on 10th to 12th February, 2011.

8. Elayaraja, K., Sivaraj, V. D. C., Sarath Chandra, V., Suganthi, R. V., **Ahymah Joshy, M. I.**, Gokuladhas, K and Narayana Kalkura, S. "Freeze dried hydroxyapatite/agarose scaffold for tissue engineering and drug delivery applications", International conference on nanomaterials and nanotechnology organized by Centre for Nano Science and Technology, K. S. Rangasamy College of Technology, India on 13th to 16th December, 2010.
9. Sarath Chandra, V., Baskar, G., Suganthi, R. V., Elayaraja, K., **Ahymah Joshy, M. I.**, Sofi Beaula, W., Mythili, R., Ganesh, V and Narayana Kalkura, S. "Study of blood compatibility and drug release on iron doped hydroxyapatite", 4th Indo-Australian conference on Biomaterials, Tissue Engineering and Drug Delivery Systems organized by Sardar Patel University, Vallabh Vidyanagar, Gujarat, India on 10th to 12th February, 2011.
10. **Ahymah Joshy, M. I.**, Elayaraja, K., Sarath Chandra, V and Narayana Kalkura, S. "Influence of metal ions on the mineralization of hydroxyapatite at physiological pH on polyacrylamide gel matrix", International conference on biomaterials implant devices and tissue engineering organized by Society for Biomaterials and Artificial Organs (India), Society for Tissue Engineering and regenerative medicine held at Rajalakshmi Engineering College, Chennai during January 6-8, 2012. (**Best poster award, second**)
11. Sarath Chandra, V., Elayaraja, K., **Ahymah Joshy, M. I.**, Thanigaiarul, K and Narayana Kalkura, S. "Investigations on cobalt doped hydroxyapatite for hyperthermia treatment", International conference on biomaterials implant devices and tissue engineering organized by Society for Biomaterials and Artificial Organs (India), Society for Tissue Engineering and regenerative medicine held at Rajalakshmi Engineering College, Chennai during January 6-8, 2012. (**Best paper award, Oral**)
12. Elayaraja, K., Rajesh, P., **Ahymah Joshy, M. I.**, Sarath Chandra, V., Suganthi, R. V., Kulriya, P. K., Sulania, I., Asokan, K., Kanjilal, D., Avasthi, D. K., Kennedy, J., Varma, H. K., and Narayana Kalkura, S. "Enhancement of wettability and antibiotic loading/release of hydroxyapatite thin film modified by 100 MeV Ag⁷⁺ ion irradiation", International conference on biomaterials implant devices and tissue engineering organized by Society for Biomaterials and Artificial Organs (India), Society for Tissue Engineering and regenerative medicine held at Rajalakshmi Engineering College, Chennai during 6-8, 2012.

13. **Ahymah Joshy, M. I.**, Elayaraja, K., Sarath Chandra, V., Suganthi, R. V., Kanjilal, D., Asokan, K and Narayana Kalkura, S. “ Investigation on in vitro drug release of surface modified hydroxyapatite polymer composite”, International conference on advanced materials held at Loyola College, Chennai, India during January 5-7, 2012.
14. Elayaraja, K., Sarath Chandra, V., **Ahymah Joshy, M. I.**, Suganthi, R. V., Asokan, K and Narayana Kalkura, S. “Nanocrystalline biphasic resorbable calcium phosphate (HAp/-TCP) thin film prepared by electron beam evaporation technique”, International conference on advanced materials held at Loyola College, Chennai, India during January 5-7, 2012.
15. **Ahymah Joshy, M. I.**, Elayaraja, K., Suresh Kumar, V., Abinaya Sindhu, P., Asokan, K., and Narayana Kalkura, S. “Investigations on the physical properties, in vitro bioactivity and drug release of 60 MeV Si⁵⁺ ion irradiated hydroxyapatite”, International conference on novel engineering materials for biomedical, energy, environment, sensing and other applications -2021 (ICON-BEES'21) held at National Institute of Technology, Tiruchirappalli-15 during March 11-13, 2021.
16. Stegi, I. S., **Ahymah Joshy, M. I.** “Dye based bromo substituted ligand and it's ruthenium (II) polypyridyl complexes: synthesis, antimicrobial activities, cyclic voltammetry study and fabrication of DSSC’, International conference on chemistry innovation: current developments, challenges and future perspectives (ICCI- 2025) held at St. Joseph’s College (Autonomous) and Bishop Heber College (Autonomous), Tiruchirappalli during 15th and 16th September 2025.

Papers Presented/Accepted in National conferences

1. **Ahymah Joshy, M. I.**, Vani, R., Elayaraja, K., Suganthi, R. V and Narayana Kalkura, S. “Mineralization of Calcium phosphate in polymer matrix”, National conference on 38th National seminar on crystallography organized by DOS in geology, University of Mysore, Mysore on 11th to 13th February, 2009.
2. Vani, R., **Ahymah Joshy, M. I** and Narayana Kalkura, S. “Synthesis of interconnected porous calcium phosphate at low temperature”, National conference on Medical Materials organized by IIT, Madras, Chennai on 13th and 14th December, 2007.
3. Sarath Chandra, V., Elayaraja, K., Suganthi, R. V., **Ahymah Joshy, M. I.**, Sulania, I., Kulriya, P. K., Asokan, K., Kanjilal, D and Narayana Kalkura, S. “Surface modification of Fe doped hydroxyapatite on 60 MeV Si⁵⁺

irradiation”, Conference on Nanostructuring by Ion Beams organized by Nanotechnology Application Centre (NAC), University of Allahabad, Allahabad 211002, India and Inter Univeristy Accelerator Centre (IUAC), New Delhi, India held at Nanotechnology Application Centre, University of Allahabad, India during October 17th to 19th 2011.

4. Suganthi, R. V., Elayaraja, K., Sarath Chandra, V., **Ahymah Joshy, M. I.**, Kulriya, P. K., Asokan, K., Kanjilal, D and Narayana Kalkura, S. “Effect of Swift heavy (Si^{5+} and Ag^{7+}) ion irradiation on hydroxyapatite and their biological performance”, Conference on Nanostructuring by Ion Beams organized by Nanotechnology Application Centre (NAC), University of Allahabad, Allahabad 211002, India and Inter Univeristy Accelerator Centre (IUAC), New Delhi, India held at Nanotechnology Application Centre, University of Allahabad, India during October 17th to 19th 2011.
5. Elayaraja, K., Rajesh, P., **Ahymah Joshy, M. I.**, Sarath Chandra, V., Suganthi, R. V., Kulriya, P. K., Sulania, I., Asokan, K., Kanjilal, D., Avasthi, D. K., Kennedy, J., Varma, H. K., and Narayana Kalkura, S. “Effect of Swift heavy (Si^{5+} and Ag^{7+}) ion irradiation on hydroxyapatite and their biological performance”, Conference on Nanostructuring by Ion Beams organized by Nanotechnology Application Centre (NAC), University of Allahabad, Allahabad 211002, India and Inter Univeristy Accelerator Centre (IUAC), New Delhi, India held at Nanotechnology Application Centre, University of Allahabad, India during 17th to 19th October, 2011.
6. Elayaraja, K., **Ahymah Joshy, M. I.**, Suganthi, R. V., Thanigaiarul, K., Sarath Chandra, V and Narayana Kalkura, S. “Raman and photoluminescence analysis of irradiated calcium phosphate based bioceramics”, National Laser Symposium (NLS-20) held at Crystal Growth Centre, Anna University, Chennai during 9th to 12th January, 2012.
7. **Ahymah Joshy, M. I.**, Stegi, I. S., Elayaraja, K., Asokan, K., Narayana Kalkura, S. “Studies on the effect of 60 MeV Si^{5+} ion irradiation on hydroxyapatite polymer composite prepared by UV photopolymerization and it's in vitro drug release” National seminar on Recent Trends in Chemistry (RTC-11) held at PG and Research Center of Chemistry, Jayaraj Annapackiam College for Women (Autonomous), Periyakulam on 28th January 2026.

Seminars/Conferences/Workshops/FDP Participated 2025-2026

1. One day International Webinar on “Recent Trends in Chemistry (RTC-I-7)” organized by PG and Research center of Chemistry, Jayaraj Annapackiam College for Women (Autonomous), periyakulam on 13th August 2025.
2. Five day International Online FDP on “AI-Driven Innovations for Chemistry Education and Research” organized by PG and Research Department of Chemistry, School of Physical Sciences, Holy Cross College (Autonomous), Tiruchirappalli during 4th to 8th August 2025.
3. Five days National Level Faculty Development Programme on “A oadmap to Ethical Governance and Excellence in Higher Education Institutions” organized by PG and Research Department of Mathematics and Department of Computer Applications, Jayaraj Annapackiam College for Women (Autonomous), Periyakulam, Theni (D.t) in collaboration with ACT Academy, Tamil Nadu Unit during 8th to 12th October 2025.
4. One day National Level Research e-Workshop on “Tools and Techniques used in Research Reports and Scientific Writing Challenges & Emerging Guidance” organized by A.C.T. Academy, Palakkad, Kerala & Tamil Nadu on 28th February 2026.
5. Workshop on “Project Proposal Development for Strengthening Rural Livelihoods in UBA Networks Villages” organized by UBA-SEG on Rural Livelihoods The Gandhigram Rural Institute (DTBU), Gandhigram, Dindigul, Tamil Nadu during 2nd and 3rd March 2026.
6. One day National Level Research e-Workshop on “How to write Quality Research Papers for Impact Factored Journals” organized by A. C. T Academy, Palakkad, Kerala and Tamil Nadu on 24th March 2026.
7. One week National Level Faculty Development Programme (Online) on “Advanced Materials for Engineering Applications” organized by Department of Humanities and Sciences, Sri Venkateswara College of Engineering & Technology (Autonomous), Chittoor, Andra Pradesh, in collaboration with a. C. T Academy, Palakkad, Kerala during 20th to 25th April 2026.

Courses Completed

1. NPTEL Online Certification 8 week course (July- September 2025), SWAYAM-NPTEL in “Applications of Spectroscopic Methods in Molecular Structure Determination”.
2. “Online NEP 2020 Orientation and Sensitization Programme (MMTTP)” of UGC organized by The Gandhigram Rural Institute-DTBU, Gandhigram from 5th to 13th January 2026.

3. One month FIP (online) with **Grade A⁺** under MMTTP of UGC held from 27th April to 25th May 2026, organized by Malaviya Mission Teacher Training Centre of Shri Mata Vaishno Devi University, Katra, J&K.

Organized

1. Served as an Organizing Secretary, National Seminar on “Recent trends in Chemistry (RTC-11)” Organized by PG and Research Center of Chemistry, Jayaraj Annapackiam College for Women (Autonomous), Periyakulam, Theni on 28th January 2026.

Published Abstract with ISBN Number

1. National seminar on Recent Trends in Chemistry RTC-11 with **ISBN Number 9789393333742**. Title “**STUDIES ON THE EFFECT OF 60 MeV Si⁵⁺ ION IRRADIATION ON HYDROXYAPATITE POLYMER COMPOSITE PREPARED BY UV PHOTOPOLYMERIZATION AND IT'S IN VITRO DRUG RELEASE**” M.I. Ahymah Joshy, Elayaraja Kolanthaia, I. S. Stegi, K. Asokan, S. Narayana Kalkura, organized by PG and Research Center of Chemistry, Jayaraj Annapackiam College for Women (Autonomous), Periyakulam, Theni District, Tamilnadu.

e-Content

1. Created a e-content on “**Spectroscopy**”
<https://youtu.be/me7yCQh0PS4?si=CJIIBDemLGPfacsJ>

Research Guidance

1. No of PG Project Guided: 1
2. No of UG Project Guided: 1

Computer Proficiency:

Operating System : Windows, MS-DOS, Linux.

Applications : MS-Office.

Contact Details

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