Curriculum Vitae

Brief Profile:

Dr. Vijayakanth Thangavel is working as Assistant Professor in the Department of Chemistry at National Institute of Technology Tiruchirappalli. He has qualified CSIR-NET, obtained his Ph.D. from Indian Institute of Science Education and Research (IISER), Pune with Prof. Ramamoorthy Boomishankar. He carried out his postdoctoral research with Prof. Ehud Gazit, Faculty of Life Sciences, Tel Aviv University, Israel. His area of interest in the interdisciplinary domain of chemistry, materials science, and biology, with a strong focus on the design and development of peptide-based functional materials. His research centers on non-crystalline and supramolecular systems, particularly peptide glasses derived from aromatic amino acids such as phenylalanine, tyrosine, and tryptophan. He has contributed significantly to advancing the understanding of hydrogen-bonded assemblies, self-assembly mechanisms, and structure–property relationships in bio-supramolecular materials, with applications spanning biomedical engineering, energy harvesting, optics, and sustainable technologies. His work also explores biodegradable and biorecyclable materials, addressing critical challenges in environmental sustainability and next-generation biomaterials.

Dr. Vijayakanth has demonstrated expertise in leading independent research, mentoring graduate and postgraduate students, and publishing high-impact scientific work, including first-author contributions in various emerging areas. He has been recognized with several fellowships and distinctions, including the Best Ph.D. Thesis Award from IISER Pune and the prestigious Ramanujan Fellowship from the Anusandhan National Research Foundation. His research experience encompasses advanced material characterization techniques and collaborative interdisciplinary projects, including work with leading international research groups. He is committed to translating fundamental research into practical applications and actively engages with academic and industrial communities through conferences, collaborative initiatives, and translational research efforts. His long-term vision is to contribute to innovative materials design and high-quality education at the interface of chemistry and biology.

1. Name: Dr. Thangavel Vijayakanth
2. Designation: Assistant Professor
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5. Email (Primary): vijayakanth@nitt.edu Email (Secondary) : vijinehru455@gmail.com
6. Field(s) of Specialization: Inorganic chemistry, Solid-state chemistry, X-ray crystallography, Peptide-based functional materials and peptide glasses, Disordered/amorphous materials and hybrid systems, Piezoelectric materials and energy harvesting, Biomaterials for sensing and biomedical applications
7. Employment Profile

Job Title	Employer	From	To
Assistant Professor	NIT Tiruchirappalli, India	December 2025	Till Date
Postdoctoral Researcher	Tel Aviv University, Israel	May 2021	December 2025
Postdoctoral Researcher	Indian Institute of Science Education and Research (IISER), Pune	May 2020	March 2021

8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division/ Grade	Subjects
PhD	Indian Institute of Science Education and Research (IISER), Pune	2014-2020	B	Inorganic chemistry and materials science

M.Phil	Jamal Mohamed College, Tiruchirappalli	2011-2012	First class-Distinction with D grade	Chemistry
M.Sc	National College, Tiruchirappalli	2009-2011	First class-Distinction with D grade	Chemistry
B.Ed	Government College of Education, Pudukkottai	2008-2009	First class with distinction	Physical education
B.Sc	Rajah Serfoji Government College, Thanjavur	2005-2008	First class	Chemistry

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To
Assistant Professor	NIT Tiruchirappalli	December 2025	Till Date

10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To

11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization
2025	Ramanujan Fellowship	Anusandhan National Research Foundation (ANRF), India
2020	Seal of excellence award	Marie Skłodowska-Curie Actions (MSCA)-Postdoctoral Scholarship
2024	Shmunis excellence scholarship	Tel Aviv University
2021	Life science fellowship award	Tel Aviv University

2020	Best Ph.D. thesis award	IISER Pune
2020	Research excellence award	Institute of Scholars (InSc)
2017	Infosys foundation travel award	Infosys

12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)
2025	Ramanujan fellowship	Anusandhan National Research Foundation, India	August	August
2021	Postdoctoral fellowship	Tel Aviv University	May	December
2020	Postdoctoral fellowship	IISER Pune	May	March
2016	Senior research fellowship	CSIR-India	January	December
2014	Junior research fellowship	CSIR-India	January	December
2009	Bharathidasan university fellowship (MSc course)	Bharathidasan University	June	March

13. Details of Academic Work
    (i) Curriculum Development
    (ii) Courses taught at Postgraduate and Undergraduate levels
        CHIR11 Chemistry (B.Tech.)
        CHIR12 Chemistry (B.Tech.)
        CHPC21 Organic Chemistry: Fundamentals and Mechanism (B.Sc.B.Ed.)
    (iii)Projects guided at Postgraduate level
    (iv)Other contribution(s)

14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed

15. Number of PhDs guided

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award

16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

Date (s)	Title of Activity	Level of Event (International/ National/ Local)	Role (Participant/ Speaker/ Chairperson, Paper presenter, Any other)	Event Organized by	Venue
June12-13, 2024	Biosoft day	International	Presenter	Tel Aviv University, Israel.	Tel Aviv University, Israel.
June13-13, 2023	Biomaterials: From Basic Science of Nature's Material Design to the Biotech Industry	International	Presenter	Weizmann Institute of Science, Israel.	Weizmann Institute of Science, Israel.
June 07, 2023	Israel Crystallography Association Structural Biology Meeting	International	Presenter	Tel Aviv University, Israel.	Tel Aviv University, Israel.
August 10-12, 2020	International Conference on Advances in Material Science and Chemistry (ICAMSC)	International	Presenter	Amrita University, Kerala, India.	Amrita University, Kerala, India.
March 18-19, 2019	International Conference on Structural Inorganic Chemistry (ICSIS-II)	International	Presenter	IISER Pune, India	IISER Pune, India
August 21-28, 2017	24th Congress and General Assembly of the	International	Presenter	International Convention Centre, Hyderabad,	International Convention Centre, Hyderabad,

	International Union of Crystallography			India.	India.
December 11-14, 2017	Modern Trends in Inorganic Chemistry (MTIC-XVII)	International	Presenter	CSIR-NCL & IISER-Pune, India.	CSIR-NCL & IISER-Pune, India.
23rd February 2016	Theory and applications - Gaussian workshop	International	Presenter	Chennai Hotel Novotel, India.	Chennai Hotel Novotel, India.

17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event (International/ National/ Local)	Date (s)	Role	Venue

18. Invited Talks delivered

Topic	Date	Inviting Organization

19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date

20. Academic Foreign Visits

Country	Duration of Visit	Programme

21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No)	Page (No)	Year	Impact Factor
Finkelstein-Zuta, G[#].; Arnon, Z. A[#].; **Vijayakanth, T.;** Messer, O.; Lusky, O. S.; Wagner, A.; Zilberman, G.; Aizen, R.; Michaeli, L.; Rencus-Lazar, S.; Gilead, S.; Shankar, S.; Pavan, M. J.; Goldstein, D. A.; Kutchinsky, S.; Ellenbogen, T.; Palmer, B. A.; Goldbourt, A.; Sokol, M.; Gazit, E.	A self-healing multispectral transparent adhesive peptide glass.	Nature	630	368	2024	48.5
Vijayakanth*, T.; Dasgupta, S.; Ganatra, P.; Rencus-Lazar, S.; Bajpayee, N.; Desai, A. V.; Nandi, S.; Jain, R.; Bera, S.; Nguyen, A. I.; Gazit, E.; Misra, R.	Peptide hydrogen-bonded organic frameworks.	Chem. Soc. Rev.	53	3640	2024	39.3
Vijayakanth,	Perspectives	Chem. Sov.	52	6191	2023	39.3

T.; Shankar, S.; Finkelstein-Zuta, G.; Rencus-Lazar, S.; Gilead, S.; Gazit, E.	on Recent Advancements in Energy Harvesting, Sensing and Bio-Medical Applications of Piezoelectric Gels.	Rev.				
Vijayakanth, T.; Xue, B.; Guerin, S.; Rencus-Lazar, S.; Fridman, N.; Thompson, D.; Cao, Y.; Gazit, E.	Heteroatom-Directed Supramolecular Helical-rich Architectures in N-terminal Protected Pyridyl Aromatic Amino Acids.	J. Mater. Chem. C.	11	5174	2023	5.2
Bajpayee, N[#].; **Vijayakanth, T[#].;** Rencus-Lazar, S.; Dasgupta, S.; Desai, A. V.; Jain, R.; Gazit, E.; Misra, R.	Exploring Helical Peptides and Foldamers for the Design of Metal Helix Frameworks: Current Trends and Future Perspectives.	Angew. Chem. Int. Ed.	62	e202214583	2023	17.0
Aizen, R[#].; **Vijayakanth, T[#].;** Guerin, S.; Cazade, P. A.; Tiwari, O. S.; Xue, B.; Shimon, L. J. W.; Cao, Y.; Thompson, D.; Gazit, E.	Experimental and Computational Investigation of Surface-Responsive Riboflavin-Based Self-Assembled Systems.	Chem. Eur. J.	31	e00726	2025	3.7
Vijayakanth, T.; Sahoo, S.; Kothavade, P.; Sharma, V. B.; Kabra, D.; Zaręba, J. K.;	A Ferroelectric Aminophosphonium Cyanoferrate with a Large	Angew. Chem. Int. Ed.	62	e202214984	2023	17.0

Shanmuganathan, K.; Boomishankar, R.	Electrostrictive Coefficient as Piezoelectric Nanogenerator.					
Vijayakanth*, T.; Liptrot, D. J.; Gazit, E.; Boomishankar, R.; Bowen, C. R.	Recent Advances in Organic and Organic-Inorganic Hybrid Materials for Piezoelectric Mechanical Energy Harvesting.	Adv. Funct. Mater.	32	2109492	2022	19.0
Vijayakanth, T.; Ram, F.; Praveenkumar, B.; Shanmuganathan, K.; Boomishankar, R.	Piezoelectric Energy Harvesting from a Ferroelectric Hybrid Salt $[Ph_3MeP]_4[Ni(NCS)_6]$ Embedded in a Polymer Matrix.	Angew. Chem. Int. Ed.	132	10454	2020	17.0
Vijayakanth, T.; Ram, F.; Praveenkumar, B.; Shanmuganathan, K.; Boomishankar, R.	All-organic Composites of Ferro and Piezoelectric Phosphonium Salts for Mechanical Energy Harvesting Application.	Chem. Mater.	31	5964	2019	7.0
Vijayakanth, T.; Pandey, R.; Kulkarni, P.; Praveenkumar, B.; Kabra, D.; Boomishankar, R.	Hydrogen-bonded Organo-amino Phosphonium Halides: Dielectric, Piezoelectric, and Possible Ferroelectric	Dalton Trans.	48	7331	2019	3.3

	Properties.					
Vijayakanth, T.; Srivastava, A. K.; Ram, F.; Kulkarni, P.; Shanmuganathan, K.; Praveenkumar, B.; Boomishankar, R.	A Flexible Composite Mechanical Energy Harvester from a Ferroelectric Organoamino Phosphonium Salt.	Angew. Chem. Int. Ed.	57	9054	2018	17.0
Yuan, H.; Tang, Y.; Naranjo, E.; Cazade, P. A.; Yao, Y.; **Vijayakanth, T.;** Yang, R.; Rencus-Lazar, S.; Thompson, D.; Shimon, L. J. W.; Wei, G.; Chen, X.; Gazit, E.	Discrete Actuation of Water-Responsive Crystalline Metal–Peptide Frameworks.	Angew. Chem. Int. Ed.	64	e20251 3629	2025	17.0
Abhishek, M.; Shreyada, S.; Susmita, S.; Abhijith, K.; Sumit, B.; **Vijayakanth, T.;** Mayurika, L.; Jagannath, M.; Shilpy, S.; Pinaki, T.	A Pyrrole-linked Benzimidazolyl Hydrazone Self-Assembles to Form HCl Channel and Induces Apoptosis in Cancer Cells.	Angew. Chem. Int. Ed.	64	e20250 5019	2025	17.0
Pophali, Salil.; Dan-Dan, S.; Rudra, A.; **Vijayakanth, T.;** Nandi, S.; Jain, R.; Shimon, L. J. W.; Rajkumar, R.; Mihail, B.	Metal Directed Self-assembly of Minimal Heterochiral Peptide into Metallo-supramolecular β-helical Tubules for Artificial Transmem-brane Water	J. Am. Chem. Soc.	147	17404	2025	15.7

	Channels.					
Veloso, S. R. S.; **Vijayakanth, T.;** Shankar, S.; Hilliou, L.; Rodrigues, P. V.; Moura, C.; Ferreira, P. M. T.; Correa-Duarte, M. A.; Gazit, E.; Castanheira, E. M. S.	Self-assembly pathway influence on dehydropeptide-based gels properties and drug release.	Macromol. Biosci.	25	70003	2025	4.1
Ahmad, M.; Roy, N. J.; Mondal, D.; **Vijayakanth, T.;** Lahiri, M.; Talukdar, P.	Illuminating apoptosis: Visible light-activated chloride carrier for chloride transport and cell death.	J. Mater. Chem B	13	5957	2025	5.8
Gupta, B. D.; Halder, A.; **Vijayakanth, T.;** Ghosh, N.; Konar, R.; Mukherjee, O.; Gazit, E.; Mondal, S.	A broad-spectrum antibacterial hydrogel based on the synergistic action of Fmoc–phenylalanine and Fmoc–lysine in a co-assembled state.	J. Mater. Chem. B	12	8444	2024	5.8
Bajpayee, N.; Pophali, S.; **Vijayakanth, T.;** Nandi, S.; Desai, A. V.; Kumar, V.; Jain, R.; Bera, S.; Shimon, L. J. W.; Misra, R.	Metal-driven folding and assembly of a minimal β-sheet into a 3D-porous honeycomb framework.	Chem. Commun.	60	2621	2024	6.22
Sahu, I.; Wang, Z.; Tang, Y.; Naskar, S.;	Bioinspired functional hydrogels	J. Mater. Chem. A	12	4169	2024	9.5

Vijayakanth, T.; Adole, V. V.; Wei, G.; Chakraborty, P.	from a minimalistic dipeptide building block.					
Yuan, H.; Cazade, P. A.; Zhou, S.; Shimon, L. J. W.; Yuan, C.; Tan, D.; Liu, C.; Fan, W.; **Vijayakanth, T.;** Cao, Y.; Thompson, D.; Yan, X.; Yang, R.; Xue, B.; Gazit, E.	Molecular Engineering of Ordered Piezoelectric SulfonicAcid-Containing Assemblies.	Small	20	2309493	2023	12.1
Ahmad, M.; Roy, N. J.; Singh, A.; Mondal, D.; Mondal, A.; **Vijayakanth, T.;** Lahiri, M.; Talukdar, P.	Photo-controlled activation of doubly ONB-protected small molecule benzimidazoles leads to cancer cell death.	Chem. Sci.	14	8897	2023	7.5
Mondal, A.; Barik, G. K.; Sarkar, S.; Mondal, D.; Ahmad, M.; **Vijayakanth, T.;** Mondal, J.; Santra, M. K.; Talukdar. P.	Nontoxic Artificial Chloride Channel Formation in Epithelial Cells by Isophthalic Acid- Based Small Molecules.	Chem. Eur. J.	29	e202202887	2023	3.7
Nayak, M. K.; Sarkar, P.; Elvers, B. J.; Mehta, S.; Zhang, F.; Chrysochos, N.; Krummenacher,	A bis-NHC–CAAC dimer derived dicationic diradical.	Chem. Sci.	13	12533	2022	7.5

I.; **Vijayakanth, T.;** Narayanan, R. S.; Dolai, R.; Roy, SB.; Malik, V.; Rawat, H.; Mondal, A.; Boomishankar, R.; Pati, S. K.; Braunschweig, H.; Schulzke, C.; Ravat, P.; Jana, A.						
Misra, R.; Tang, Y.; Chen, Y.; Chakraborty, P.; Netti, F.; **Vijayakanth, T.;** Shimon, L. J. W.; Wei, G.; Abramovich, L. A.	Exploiting Minimalistic Backbone Engineered γ-Phenylalanine for the Formation of Supramolecular Co-Polymer.	Macromol. Rapid Commun.	43	2200223	2022	4.3
Misra, R.; **Vijayakanth, T.;** Shimon, L. J. W; Abramovich, L. A.	Atomic insight into short helical peptide comprised of consecutive multiple aromatic residues.	Chem. Commun.	58	6445	2022	6.22
Ahmad, M.; Mondal, D.; Roy, N. J.; **Vijayakanth, T.;** Talukdar, P.	Reversible stimuli-responsive transmembrane ion transport using phenylhydrazone-based photoswitches.	ChemPhotoChem.	6	e202200002	2022	3.0
Sahoo, S.; **Vijayakanth, T.;** Kothavade, P.; Dixit, P.; Zaręba, J. K.; Shanmuganathan	Ferroelectricity and Piezoelectric Energy Harvesting of Hybrid	ACS Mater. Au	2	124	2022	6.5

, K.; Boomishankar, R.	A_2BX_4-Type Halogenocuprates Stabilized by Phosphonium Cations.					
Ahmad, M.; Chattopadhayay, S.; Mondal, D.; **Vijayakanth, T.;** Talukdar, P.	Stimuli-Responsive Anion Transport through Acylhydrazone-Based Synthetic Anionophores.	Org. Lett.	23	7319	2021	5.0
Dutta, S.; Vikas.; **Vijayakanth, T.;** Munshi, P.	Ferroelectricity and Uniaxial Negative Thermal Expansion in a Purely Organic Multifunctional Material.	ACS Appl. Electron. Mater.	3	3633	2021	4.7
Ram, F.; Gudadhe, A.; **Vijayakanth, T.;** Aherrao, S.; Borkar, V.; Boomishankar, R.; Shanmuganathan.	Nanocellulose Reinforced Flexible Composite Nanogenerators with Enhanced Vibrational Energy Harvesting and Sensing Properties.	ACS Applied Polymer Materials.	2	2550	2020	4.8
Dhara, D.; Vijayakanth, T.; Nayak, M. K.; Kalita, P.; Boomishankar, R.; Yildiz, C. B.; Chandrasekhar.; Jana, A.	Contrasting Reactivity of (boryl)(aryl)lithium-amide With Electrophiles: N- vs. p-aryl-C-nucleophilic	Dalton Trans.	47	14411	2018	3.3

	Substitution.					
Srivastava, A. K.; Vijayakanth, T.; Divya, P.; Praveenkumar, B.; Steiner, A.; Boomishankar, R.	Altering Polarization Attributes in Ferroelectric Metallo-Cavitands by Varying Hydrated Alkali-Metal Guest Cations.	J. Mater. Chem. C	5	7352	2017	5.2
Dhara, D.; Vijayakanth, T.; Barman, M. K.; Naik, K. P. K.; Chrysochos, N.; Yildiz, C. B.; Boomishankar, R.; Schulzke, C.; Chandrasekhar, V.; Jana, A.	NHC-stabilized 1-hydrosilaimine: Synthesis, Structure, and Reactivity.	Chem. Commun.	53	8592	2017	6.22
Deshmukh, M. S.; Vijayakanth, T.; Boomishankar, R.	Stereo-chemically Distinct Cyclotetrasiloxanes Containing 3-Pyridyl Moieties, and Their Functional Coordination Polymers.	Inorg. Chem.	55	3098	2016	4.7

(B) Patent

1. Gazit, E.; Zohar, A.; Gilead, S.; Finkelstein, G.; **Vijayakanth, T**. Peptide-based Non-Crystalline Materials and Compositions and Processes for Obtaining Same (Application Number: IL2023051062, Publication Number: 2024/075124).

2. Aromatic tripeptides exhibiting exceptionally high aqueous solubility Patent Status: Country: Name of Inventor Patent Number: Description: Date of Filing Filed Israel Gazit.E, **Vijayakanth.T**,....Shankar, S Ramot Ref.: 2026-025 Related to highly soluble aromatic tripeptides and compositions 09 Mar, 2026.

(C) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year

(D) Books & Monographs

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number