

Prof. M. Indira Devi FRSC

Department of Chemistry, Nagaland University

- 1. Present Position:**
 - Senior Professor, Dept. of Chemistry (w.e.f. 1st January 2019 & Professor w. e. f. 27th March 2005)
 - Ex -Visitor Nominee from MHRD, Shastri Bhavan, New Delhi. Govt of India for Tripura University w.e.f. 14th April 2018 for three years.
 - Ex-Dean, School of Sciences Nagaland University **w.e.f 19th April 2016 to 24th April 2019**
- 2. Founder Head as Assoc. Prof.** of the Department, 27th March 1997 .
- 3. Award /Rewards**
 - Life Time Achievement Award conferred by International Conference on Chemistry in Multidisciplinary Research (ICCMR) 18th -21th February 2025 , Nagaland University
 - Fellow of Royal Society of Chemistry, FRSC by Royal Society, United Kingdom on the 27th February 2024

4. Education & Area of Research

Metriculation	Pre University	Graduation	M. Sc	Ph.D
Ist class (1980) (Manipur Board)	Ist Class, 6th Position(1982) (Manipur University)	Pass in Hons (1985) (Manipur University)	1st class Distinction, Top in physical chemistry (1989) South Gujarat University, Surat.	Oct 1995 Bhavnagar Univ. & CSMCRI, Bhavnagar (Gujarat)

Ph. D Topic : *Spectral Studies of Lanthanide - Complexes in solution : Interpretation & Structure Elucidation*

Area of Research : *Biophysical Studies of Lanthanides employing 4f-4f transition spectra, Lanthanide Nanomaterials , Computational Chemistry on lanthanides*

5. Published 4(Four Patents) : Three granted & one published from our own side.

6. Employment/ Teaching- Research Experiences

Research Associate	Associate Professor	Professor/Senior Prof.
1994 July -1995 December Bhavnagar Univ. Gujarat 1995 January – 1997 March Central Salt & Marine Chemical Research Institute(CSMCRI),Bhavnagar(Gujarat)	1997 – 2005 (March) Nagaland University (8years)	Professor : 2005 (March) Till Date (Above 21 years 2months) Senior Prof. : 7 (Seven) yrs 4 months

(2 yrs 6months)		
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Teaching & Research

: Above 30 years at PG level

Research and Administration at Post Graduate level

(Excluding the Research during Ph.D)

: above 30 years.

7. Administrative Experiences:

- **Founder Head , Department Chemistry, Nagaland University** 27th March 1997
- **5 (five) times Head, Dept. of Chemistry**
 - I. August 1997 to August 2000
 - II. 11. 2004 July to 2007 July
 - III. July 2007 to July 2010
 - IV. 28th June 2013 to 18th April 2016
 - V. 19th April 2019 to 22nd April 2022
- > **External Member of Academic Council, Tripura University (central) 14/04/2018 to 13/04/2021**
- **Member of Executive Council (Three terms)**
 - years (May 2008 to May 2011)
 - 19thApril 2016 to 24th April 2019 & October 2025 till date
- > **Member of Academic Council. Above 28 years since the inception till date**
- **Chairperson, School Board of Sciences** 3 yrs
- **Chairperson, Post Graduate Studies** 15 years During Headship
- **Chairperson, Undergraduate Studies** 15 years during Headship
- **Chairperson of College Inspection Team** 19/04 2016 to 20/07/2021
- **Member of School Board of Sciences** Above 29 yrs till date
- **Member of Post Graduate Studies, Chemistry** ----Do----
- **Member of Undergraduate Studies** -----Do-----
- **Member of Planning Board** 27/09/2007 to 26/09/2010
- **Member of Central Purchase Committee** 7/07/2009 to 6/07/2012
- **Member of Campus Development Board** 2006 to 2016 for 10 years
- **Member of Deans' Committee** 19 /04/2016 to 24 /04/2019
- **Member of the Committee of Master Plan Of Nagaland University** for 10 (ten) years w. e. f 9th May 2005
- **Member of Research Studies** 5th August 2015 till date
- **Vice President Nagaland University Teachers' Association** April 2006 to April 2008
- **Member of the Governing Body St. Joseph College, Jakhma, Kohima, Nagaland** April 2018 to April 2023
- **Member of Selection committee for the various Positions : Asst Prof., Asco. Prof. and Prof. of Nagaland Univ. & Colleges of Nagaland and Nagaland Public Service Commission** Since the inception 1997 till date

8. Projects:

Title	Year	Amount	Funding Agency
1. Studies onPr(III).....and Zn(II)....4f-4f Transition Spectra..	2001 -2004	16.4 lacs	DST, Govt .of India
2. Absorption SpectralPr (III)/Nd(III).....with amino acid series.....	2007 -2011	11.2 lacs	CSIR, New Delhi
3. FIST, Infra Structure Development for Department of Chemistry as Departmental Project.	2004 -2009	30 lacs	DST, Govt. Of India

9. Membership in Professional Scientific Society:

- (i) Life member of National Society of Chemical Research (IISc, Bangalore)
- (ii) Life member of Indian Association of Chemistry Teacher (Mumbai)

10. Ph.D Degree produced : 11 (Eleven)

- Ph.D, under progress : 6(six)
- M. Sc. Dissertation : Above 50 (fifty)

11. Other Achievements / contributions :

- > Participated as KEY NOTE Speaker at the 9th International conference on Physical Chemistry, at ZIAMEN China 18th to 20th April 2024
- > Participated as Invited Speaker at The 4th Int'l Conference on Physical Chemistry (CPC 2018) held from July 14-16, 2018 in Kunming, China

12. BOOKS/ MONOGRAPH /CHAPTERS

Absorption Spectral analysis for the interaction of Pr(III)/ Nd(III) with various ligands using 4f-4f transition spectra: Pseudohypersensitive Transitions. (Monograph)

BOOKS:

- i. *Significance of Lanthanides and its interaction with Nucliec Acids (Lambert Academic Publishing 978-3-659-63939-5)*

(published in Oct 2017)

- ii. *Biological and Clinical Approach of Lanthanides (Lambert Academic Publishing, 978-620-2-02381-8)*

(Published in December 2017)

iii. *Computational Chemistry of Lanthanide Spectra: Application in Theoretical Analysis.*

(Lambert Academic Publishing, 978-613-8-38832-6)

(Published in April 2018)

iv. *Chapter :*
Analysis of Physio- Chemical Properties and Microbial Contamination to Check the Quality of Water, Lumami, Zunheboto – Nagaland
Science of Environment (Volume -- III)
SCIENG PUBLICATION, 154 – 169, 2022

13. **Research Publications:** 40 (forty), Details of which are available in
University Library website.

Scopus indexed - 36 out of which one is individual single author

UGC approved - 4

14. **Abstract published in Seminar/Symposium/Conferences attended : above 25(twenty five)**

International 6 and National 19

15. **Lists of Patents published : Four : Three granted & one published ourselves**

(1) Patent No 202531119707A , publication date 19/12/2025

**Title: Pr(III) -DL-Serine-Ca(II) complex formation using 4f-4f Transition spectra at
Various p^H**

(2) Patent No :562919, Application No. : 202431028 dated 05/04/2024

Title : Novel Catalyst for Organic Reactions and Process

(3) Patent No :553846 ; Application no. 202431028201 Dated 05/04/2024

Title : A Novel Process Of Making Lanthanum Nanoparticles

(4) Patent application No 202431029652 Dated 26/04/2024

Title : A novel Complex for antioxidant properties

16. Total Publications: 40 (Forty)

No	Date	Title	Name of journal	Refereed journal or Not	Impact factor/ citation
1	In Press	Theoretical Analysis of the multimetal complexation	Iranian Journal of Science	Scopus indexed	

		of Pr(III):L-Leucine :Mg(II);Thermo-kinetic studies of the reaction pathways			
2	In Press	Decoding Multimetal coordination of Pr(III) with L-Alanine and Mg ²⁺ :4f-4f Transition Spectral Perspective	Asian Journal of Chemistry	-Do-	
3	In Press	Facile synthesis of multifunctional GdF ₃ :Eu ³⁺ Nanoparticles and its characterization	Applicable Chemistry	UGC approved	
4.	3 rd February 2026	Theoretical study of the Pr(III):DL-Serine:Ca ⁺² complex formation at different p ^H :4f – 4f transition spectra as PROBE	Journal of Solution Chemistry http://doi.org/10.1007/s10953-025-01545-1	Scopus indexed	1.6
5.	10 th March 2024	Quantitative Analysis of the coordination nature of the Synthesized Praseodymium(III) Isonicotinic acid Nanomaterials : Characterization and Study of Antimicrobial Properties	Journal of Applicable Chemistry 13(2):59-72 ISSN:2278-1862	International Referred	1,2
6.	19/03/2024 Z. Phys.Chem	Facile synthesis of Lanthanum carbonate octahydrate and Lanthanum oxide nanoparticles by Sonochemical method : Systematic Characterization	Z.Phys.Chem http://doi.org/10.1515/zpch-2023-0396	Scopus, WoS and UGC approved (referred)	3.2
7.	Oct. 2023 Re:Proof_PhysChA10_23 (14.08.23)	Spectral analysis for the complexation of Nd(III) with L-Tryptophan and L- Isoleucine in the Presence/absence of Mg(II) :4f-4f Transition Spectra as Probe	Russian Journal of Physical Chem 2023(97)2149 – 2159	-Do-	0.8
8	10 th March 2023	Synthesis, characterization, Antioxidant and antibacterial Studies of Praseodymium complex with glutathione	Current Science Vol .124 No 5, 10 th March 2023	Scopus, WoS And UGC approved (Refereed)	1.1
9	13 th Nov 2022	Computation of Spectral parameters for the complexation of Pr(III) with L- Histidine through 4f -4f transition spectra : Further analysis of its kinetic and thermodynamic parameters	Chemical Physics Impact 5(2022) 100127	-Do-	4.3

10	24 th Sept. 2022	Theoretical Study of the heterometal complexation of Pr(III) with L-Isoleucine in the presence/absence of Mg(II) in solution : 4f – 4f transition spectra as probe	Chemical Physics Impact 5(2022) 100108	-Do-	4.3
11	19 th Sept. 2022	4f-4f Transition Spectra of the Interaction of Pr(III) with L-Valine in Solution : Kinetics and Thermodynamic Studies	Asian Journal of Chemistry 34, 10(2022) 2688 -2696	-Do-	0.34
12	July 2022	Absorption Spectral Study for the Interaction of Pr(III) with L –Aspartic Acid in various aquated organic solvents through 4f-4f transition spectra : Analysis of reaction pathways and thermodynamic parameters	Journal of Pharmaceutical Negative results 2022; 13(1) :860 - 78	UGC Care Listed	0.16
13	Dec. 2022	Complexation of Pr(III) with L-methionine in the presence /absence of Mg (II) :their reaction dynamics and thermodynamic properties,	Chemical Phys Impact 2022;4:100078	Scopus, WoS And UGC Care Lists	4.3
14	July 2022	Computational study of multimetal complexation of Nd(III) with GSH and Mg(II) in solution at different Ph through 4f-4f transition spectra	Chemical Phys. Impact 2022 :5. 100090	-Do-	4.3
15	Aug. 2022	Absorption spectral and thermodynamic analysis for the complexation of Pr(III) with L-Phenylalanine in the presence / absence of Mg(II) using 4f-4f transition spectra as probe	Eur Phys J Plus 2022,137(5)608	-Do-	2.9
16	Sept. 2021	Theoretical computation of interaction parameters for the complexation of GSH with Pr(III) and Mg(II) in solution. Analysis of their reaction dynamics and thermodynamic Characters	J Indian Chem Soc 2021, 98(12)	-Do-	3,4
17	July 2021	Computation of energy interaction and intensity parameters for the complexation of Pr(III) with glutathione at different pH in the presence and absence of Mg(II) : 4f -4f transition spectra as a probe	Polyhedron 2021,200	-Do-	2.6
18	Oct. 2019	Chrystal Structure and Hirshfeld surface analysis of Rac – 2 –[2-(4-Chlorophenyl)-3,4-dihydro-2H -1-benzo-pyran-	Research Communications Acta Cryst (2019)	-Do-	0.6

		4-ylidene] Hydrazine-1-carbothioamide	E75, 707-710		
19	31 st July 2018	Computation of Energy, Intensity and Thermodynamic Parameters for the Interaction of La(III) with Nucleic acids : Analysis of Structure conformations, chemical kinetics and thermodynamics behavior through 4f-4f transition Spectra as probe	Journal of Material Sciences and Engineering, 6, 169 -183, 2018 10.4236/msce.2018.67018	-Do-	5.44
20	8 th May 2018	4f-4f Transition Spectral Analysis to probe the kinetics for the complexation of Nd(III) with Guanosine Guanosine Triphosphate(GTP)	Journal of Adv Chemical Sciences 2(2018)556-561	-Do-	
21		A Probe into the kinetics of the interaction of Pr(III) Ions with some selected Amino acids : A 4f-4f transition spectral study	Advances in Material Science and Application, 2014 ;4(3) 157 - 163	-Do-	
22	13 March 2012	Comparative 4f-4f absorption spectral approach to study the complexation of Pr(III) with glutathione and guanosine triphosphate(GTP) in the presence/absence of Ca(II).	International Journal of Basic and Applied Chemical Sciences 2013, 3(1)19-30	--Do--	0.25
23	16 th Nov. 2012	Evaluation of intensity and energy interaction parameters of the complexation of Pr(III) with selected nucleoside and nucleotide through absorption spectral studies	Spectrochimica Acta part A 103(2013) 16-166	Scopus, WoS & UGC care list	4'6
24		Comparative 4f-4f absorption spectral studt for the interaction of Nd(III) with some amino acids: Preliminary thermodynamics and kinetic studies of interaction of Nd(III): glycine with Ca(II)	Spectrochimica Acta part A 87(2012) 142-150	-Do-	4.6
25	6 th June 2009	Computation of Energy Interaction Parameters as well as Electric Dipole Intensity parameters for the absorption spectral studies of the interaction of Pr(III) with L-Phenyalanine, L-Glycine, L- Alanine and L-Aspartic Acid in presence and absence of Ca(II) in Organic solvents	Spectrochimica Acta part A 74(2009) 434- 440	-Do-	4.6
26		Absorption Spectral Studies of	Journal of		

		4f-4f Transitions for the Complexation of Pr(III) and Nd(III) with Gluthathione reduced (GSH) in presence of Zn(II) in Different Aquated Organic solvents and Kinetics for the complexation of Pr(III):GSH with Zn(II)	Alloys and Compounds (JALCOM) 451(2008) 365 - 371	-Do-	6.3
27		Calculation of electric dipole intensity parameters of 4f-4f transitions of Pr(III) and glutathione complex reduced (GSH) in presence and absence of Zn(II)	Spectrochimica Acta part A 66(2007)1333-1339	-Do-	
28		Calculation of electric dipole intensity parameter to explore some of the interaction between hard metal ions Pr(III) and Nd(III) with π -electron density of butane-1,4 and butyne-1,4 diols in non-aqueous solutions: An absorption spectral study	Spectrochimica Acta Part A 63 (2006)154-159	-Do-	4'6
29		Comparision of Energy Interaction Parameters for the Complexation of Pr(III) with Gluthathione reduced (GSH) in presence and absence of Zn(II) in aqueous and aquated organic solvents using 4f-4f tranion spectra as PROBE	Spectrochimica Acta Part A 61(6) (2005) 1219-1225	- Do-	4.6
30		Comparison of electric dipole intensity parameter for a series of structurally related Pr(III) complexes with ureas and thioureas in non-aqueous media	Asian Journal of Chemistry 17, 3(2005) 1435-1445	--Do--	0.344
31		Calculation of electric dipole intensity parameter for the complexation of Pr(III) and Nd(III) with 1,10-Phenanthroline and 2,2'-Bipyridyl by 4f-4f absorption spectral analysis	Asian Journal of Chemistry 20,2(2008)	--Do--	0.344
32	August 2004	Electric Dipole intensity of nona-coordinated complexes of Nd(III) with diols in non aqueous solution : Evidence of participation of pi- electron density of diols with Nd(III)	Single authored Paper Indian Journal of Chemistry 43(2004) 1692-1695	-Do-	0.5
33	Nov 2004	Spectral study of the complexation of Nd(III) with glutathione reduced (GSH) in the presence and absence of Zn(II) in aquated organic solvents	Journal of Chemical Sciences 116, 6(2004)303-309	-Do-	1.7

34		Biological and Clinical Aspects of Lanthanide Coordination Compounds	Bioinorganic Chemistry and Applications 2(3-4),(2004)155-192	-Do-	4.5 / 107
35		An absorption Spectral Study of 4f-4f transitions for the Interaction of Pr(III) with different Amino acids in aqueous and aquated Organic Solvents	Asian Journal of Chemistry 16(1),(2004)412-428	-Do-	0.344
36		Simultaneous interaction of two Dissimilar Metal Ions with Tripeptide Glutathione (reduced) in different aqueous organic solvents : An absorption Spectral Study	Chemical & Environment Research 12(3&4) (2003) 295 -305	-Do-	2.89
37		Absorption Spectral Studies Involving 4f-4f Transitions as Structural Probe in Chemical and Biochemical Reactions and Compositional Dependence of Intensity Parameters	Applied Spectroscopy Reviews 38(4) (2003)433-493	-Do-	6.6 / 34
38	January 1997	Comparison of electric – dipole intensity parameters for series of structurally related Nd(III) complexes with ureas and thioureas media.	Spectrochimica Acta Part A. 35 (1997) 17-22		4.6
39		“Comparison of electric dipole intensity parameters for a series of structurally related Nd(III) complexes with ureas and thioureas in non-aqueous media” S.N. Misra, M. Indira Devi and C.M. Suveerkumar	Indian J. of Pure and Applied Physics 35(1997)17	-Do-	1.1
40		Electric Dipole intensity parameters for a series of Structurally related Praseodymium(III) complexes and unusual sensitivities of some 4f-4f transitions	Reviews in Inorganic Chemistry 14(5)(1994) 347-360	-Do-	4.7

17. No. of Research Scholars successfully guided : 11(Eleven)

Name of Programme : Ph.D. as main Supervisor with Title	Awarded (No.) (Under-progress not to be included) & Name of Scholar

1 Synthesis of Lanthanide complexes and their Nanoparticles :	Awarded on the 22 nd March 2025 Regd. No Ph.D/CHE/00057 Mr.Punazungba Imsong
2. Spectral Analysis of Lanthanide Complexes with essential Amino Acids : Kinetic and Thermodynamic Approach	Awarded on 27 th August 2023, Regd no. 787/2017 Ms Zevivunou
3 Theoretical Analysis of the Complexation of Ln(III) with Glutathione/Mg(II) : Its Thermodynamic and Biological Properties	Awarded on 10 th August 2023, Regd. No 786/2017 Mr. Mhasirikho Ziekhru
4 Spectral studies of the Complexation of Lanthanides with selected amino acids : Evaluation of Thermodynamic parameters	Awarded on 6 th June 2023, Regd. No 808/2018 Mr. Chubazenba Imsong
5 Synthesis and Spectral Studies of the Lanthanide Complexes with pyridine and some amino acids: kinetics and Thermodynamic Approach	Awarded on 4 th Sept 2023, Regd. No. 788/2017 Ms. Juliana Sanchu
6 Synthesis of Lanthanides.....spectral and chemical kinetics	Awarded on 29 th June 2022, Regd No 703/2016 Ms. Rukuosenuo Zatsu
7 Ph. D Title : Kinetic Studies on complexation of Pr(III)/Nd(III) with nucleosides and nucleotides in the presence of Ca(II) through 4f -4f transition as spectral PROBE and evaluation of some thermodynamic parameters	Awarded on 15 th January 2015, Regd no.392/2009 Bendangsenla N
8 Ph. D Title : Quantitative 4f-4f transition spectral analysis to probe the kinetics of simultaneous complexation of lanthanide ions Pr(III)/Nd(III) with amino acids and metal ions Ca(II)/Zn(II) in aqueous and aquated organic solvents	16 th April 2013, Regd. No.284/2007 T.Moainla Ao
9 Ph. D Title : Quantitative 4f-4f transition spectra analysis to probe the kinetics of simultaneous complexation of glutathione reduced with Pr(III) and Nd (III) in presence of Zn(II)/Mg(II) in aqueous and aquated organic solvents	Awarded on 12 th May 2008, Regd no. 198/2005 Sumitra Ch.
10 Ph.D Title : Spectral analysis of simultaneous complexation of two or three chemically dissimilar metal ions Pr(III)/ND(III)/Er(III) and Ca(II)/Zn(II) with Glutathione using 4f-4f transition spectra as PROBE	Awarded on 27 th August 2006, Regd. No. 189/2005 TH. David Singh
11 Ph. D Title : Chemical and geochemical aspects of the shales in and around Kohima	Awarded on 17 th Sept, 2004, Regd no. 118/2003 Vineetha K

18. Participation and contribution in relevant areas in higher education

	Organisation	Area of specialization
Visiting Professor		
Resource Person	1. 4 th International Conference on Physical Chemistry July 14 -16, 2018 CPC Organizing Committee, Engineering information Institution	Physical Chemistry: <i>Study of Thermodynamic behavior of the interaction of Pr(III) with Nucleosides and Nucleotides: 4f-4f spectra as PROBE</i>

	<p>Kunming, China</p> <p>2. National Seminar on GlobalizationNE India 19-20 March 2015 organized by Nagaland University Teachers Association, Lumami, India</p> <p>3. DBT Sponsored National seminar on Bio-resource Exploration and Utilization : Application in Modern Biology 9-10th October organized by Bio-informatics Infrastructure Facility (BIF) Centre Nagaland University Lumami</p> <p>4. DST Inspire Programme Held at Nagaland University Lumami 7 to 11 December 2009</p> <p>5. Global Initiative of Academic Network (GIAN) 1-5th October 2019 Department of Zoology, Nagaland</p>	<p><i>Globalization, Development and Environment with special reference to NE India</i></p> <p><i>Role of Lanthanides in Biochemical Studies</i></p> <p>1. <i>Talk on Theory of Chemical Dynamics</i> 2. <i>Analysis of Water Sample (Experimental Demo)</i></p> <p><i>Anti- Inflammatory Life Style For Prevention of Chronic Degenerative Diseases</i></p>
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References :

1. Prof. J. K. Patnaik
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2. Prof. G. D. Sharma
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3. Prof. S.K. Srivastav
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