

National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

Curriculum Vitae

Brief Profile: 1-2 paragraphs (not exceeding 500 words)

Dr. L. Cindrella is the Professor and Head, Department of Chemistry, National Institute of Technology, Tiruchirappalli. Dr. Cindrellagot her Ph.D. degree from Madurai Kamaraj University specializing on solar selective coatings and convection suppression devices for application in solar thermal systems. Her current research areas are development of catalysts, membrane electrode assembly for PEM fuel cells, energy materials for solar thermal and photovoltaic conversion systems and their real time evaluation. Dr.Cindrella has 25 years of teaching experience at NIT, Tiruchirappalli. She was selected for the TCT programme on Storage of solar energy at Salford University, UK in 1997 and received training on PEM fuel cell at Arizona State University, USA in 2007& 2009. She has completed seven research projects, and one R & D project is in progress. Dr.Cindrella has guided 3 Doctoral thesis and is currently guiding 10 scholars in the fields of energy materials and their applications. Dr.Cindrella has established an electrochemical lab for assembling and testing PEM fuel cell and has also developed a Computational Chemistry Lab for molecular modeling.



1.	Name	Dr. L.Cindrella
2.	Designation:	Professor and Head
3.	Office Address:	Department of Chemistry, NIT, Trichy
4.	Telephone (Direct) (Optional): Telephone : 0431 25003634 Extn (Optional): Mobile (Optional):	0431 25003634 9486001134
5.	Email (Primary): cind@nitt.edu	Email (Secondary) : drcindrella07@gmail.com
6.	Field(s) of Specialization:	Fuel cells, Conducting polymers, Solar selective coatings, Computational Modeling

7. Employment Profile

Job Title	Employer	From	To
Lecturer	REC, Trichy.	Sep.1992	Oct.1997
Senior Lecturer	REC, Trichy.	Nov.1997	Oct.2002
Assistant Professor	REC, Trichy. (Renamed as NIT)	Nov.2002	Dec.2005
Associate Professor	NIT, Trichy	Jan.2006	Jun.2009
Professor	NIT, Trichy	Jul.2009	Till date

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

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D.	Madurai Kamaraj Univ.	1997	-	Solar selective coatings and convection suppression devices
M.Sc.	Gandhigram University	1986	86.7%	Applied Sciences
B.Sc.	Holy Cross college, Trichy	1984	75.4%	Chemistry

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To
Head	Department of Chemistry	Since Feb.2015	Till Date
Presiding officer, Internal complaints committee	NIT, Trichy	Since Feb.2014	Till Date
Associate Dean (Students)	NIT, Trichy	2008	2009
Warden, Opal Hostel	NIT, Trichy REC, Trichy	2007 1993	2008 1994

10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To
Ph.D. Doctoral committee external member	Bharathidasan University, Anna University	2005	2010
Ph.D. Doctoral committee member	Gandhigram University	2016	
Ph.D. Viva voce examiner	Bharathidasan University	2015, 2016	
Ph.D. Viva voce examiner	Calicut University	2016	
Vice-President	SAEST, Karaikudi	Since Oct.2015	Till Date
Member, Board of Studies	Vivekananda Engg.College for Women	2014	2015
Selection committee member	CECRI, Karaikudi	2015, 2016	
Faculty recruitment Committee Member	Central University, Thiruvarur	2014, 2016	

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UGC NET Observer	CBSE	2015, 2016	
JEE Question paper subject setter	CBSE	2009, 2013, 2014	
Selection committee member	PSNA College of Engineering, Dindigul	2016	
AICTE Nominee for Faculty recruitment Committee	Thiagarajar College of Engg., Madurai	2016	
Examiner for valuation of P.G. students	St. Joseph's College, Trichy 2	2015	
DSIR project review committee member	Saveetha Engg. College, Chennai	2015	

11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization
2009	Visiting Professorship	Fuel cell Lab, Arizona State University at Polytechnic Campus, USA
1997	TCT Fellow award	British Council, UK-India programme
1987 -1992	UGC JRF&SRF	UGC, India
1986	University I Rank & Gold medalist	Gandhigram University, Gandhigram
1984	Prize for Proficiency in Chemistry	Holy Cross College, Trichy
1977-1981	National Merit Scholarship at the Secondary stage for talented Children	Govt. of India through Tamil Nadu state Govt.

12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)
1997	TCT Fellow award	British Council, UK-India programme	Jan.1997	Jul.1997
1989	Senior research fellowship	UGC	Aug.1989	Jul.1992
1987	Junior research fellowship	UGC	Aug.1987	Jul.1989

13. Details of Academic Work

- (i) Curriculum Development : Physical Chemistry and Computational Chemistry (Theory and Lab)
- (ii) Courses taught at Postgraduate and Undergraduate levels

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PG: Quantum Chemistry and Group theory applications in Chemistry
Computational Chemistry (Theory and Lab)

(iii) Projects guided at Postgraduate level: 45 Nos

(iv) Other contribution(s) – Developed Computational Chemistry Lab for M.Sc. Students.

14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed
Preparation of free-standing films of conducting polyaniline, based on structure – property optimization, for use in photo electro chemical devices	UGC, India	2005	2007	Completed
“Fuel Cell Components”, Inter-Institutional collaborative research under the scheme of Global Engagement	Arizona State University, USA	2008	2009	Completed
Functionally impregnated Zeolite based potassium sensor	DST	2011	2012	Completed
Radiation capped, stagnation temperature improved, wide spectrum responsive Solar Selective coatings for solar thermal systems	CSIR	2014	2017	Ongoing

Minor research projects:

1. “Development of metallic solar selective coatings from low concentration electrolyte”, UGC Minor research project, 1999. (Completed)
2. “Aluminium- air high energy fuel cell”, minor research project funded by Tamilnadu State Council for Science and Technology, Chennai, 2000. (Completed)
3. “Development of metallic solar selective coatings” (for applications in solar cooker), UGC Minor research project, 2001. (Completed)
4. “Optical Nano fillers”, minor research project funded by Tamilnadu State Council for Science and Technology, Chennai, 2005. (Completed)

15. Number of PhDs guided

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award
T.R. Heera	Polymer based non-radiative channels blocked quantum dot solar cells	Supervisor	2010
Jayasree	Synthesis and characterization of hybrid nanocomposites and evaluation of their performances for the oxygen reduction reaction in proton exchange membrane fuel cell	Supervisor	2013
K.Mohanraju	Synthesis and electrocatalytic studies of precious and non-precious metals based electrocatalysts for fuel cell application	Supervisor	2016

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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
May – Aug. 2016	IDP in Educational Technology	National	Participant	IIT, Bombay	Video conf.
Aug.- Sep.2 016	3D- Animation	National	Participant	IIT, Bombay	Video conf.
18 th – 21 st 2016	Conference	International	Paper presenter	IIT, Kharagpur	IIT Kharagpur
28 th - 29 th Apr. 2015	Conclave on Academic reforms	National	Participant	NIT, Trichy	NIT, Trichy
29 th Jan. 2015	Train the Trainer	Local	Participant	NIT, Trichy	NIT, Trichy

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

Title of Activity	Level of Event (International/ National/ Local)	Date (s)	Role	Venue
National Convention of Electrochemists -19	National	28 th & 29 th Mar. 2016	Convener	NIT, Trichy
CRSI-Mid year symposium	National	23 rd – 25 th July 2015	Organizing committee member	NIT, Trichy
Workshop on Self assembled layers – Preparation, Characterization and Applications	National	27 th – 28 th Nov.2015	Organizer	
Training programme on	National	20 th – 21 st	Organizer	NIT, Trichy

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Electrochemical methods for evaluation of nano materials		Nov.2014		
Workshop on Electroanalytical methods in practical chemistry and industrial applications of electrochemistry	National	10 th – 12 th Mar.2014	Organizer	NIT, Trichy
Workshop on Computational Methods in Chemistry – Learning through Lab. Sessions	National	4 th – 5 th Mar.2013	Organizer	NIT, Trichy
Introduction to Gaussian: theory and Practice	National	6 th -		

18. Invited Talks delivered

Topic	Date	Inviting Organization
Fuel Cell Technology	4.11.2016	Academic Staff College, Bharathidasan University, Trichy
Functional coating – current trends	6.3.2015	Thiagarajar college of Engg., Madurai
Polymer solar cells	12 -13.2.2015	Kumarasamy college of Engineering, Karur
Group Theory and its applications	19.2.2015	Periyar E.V.R. College, Trichy – 23
Career opportunities in Science	28.2.2016	Mount Zion International School, Pudukkottai
Research Avenues in Chemistry	16.2.2016	Gandhigram University, Gandhigram
Proton exchange membrane fuel cell – it current trends	20.9.2013	Dhanalakshmi Srinivasan college, Perambalur
Regenerative fuel cells	28.2.2011	Madurai Kamaraj University

19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date
Life Member	Indian Sc. Congress Association	L13353, 30.6.2008
Life Member	SAEST	LF668, 5.1.2007
Life Member	CRSI	LM938, 22.2.2007
Life Member	ISEAC	

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20. Academic Foreign Visits

Country	Duration of Visit	Programme
UK	Jan.1997 – July 1997	Technical Cooperation Training under UK-India RECs project
USA	May 2007 – June 2007	Technical Education Quality Improvement Programme
France	Nov.2007	Paper presentation in Conference
USA	Jan.2009 – Feb.2009	Global engagement of Academic Institutions, ASU, USA
Italy	Dec.2014	Paper presentation in Conference
USA	May 2016	Paper presentation in Conference

21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal (Optional)
K. Mohanraju, G. Kousik, L. Cindrella	Surfactant free synthesis of high surface area Pt@PdM ₃ (M = Mn, Fe, Co, Ni, Cu) core/shell with enhanced electrocatalytic activity and durability for PEM fuel cell application	New Journal of Chemistry	40	8681-8695	2016	3.277
K. Mohanraju, L. Cindrella	One-pot surfactant-free synthesis of high surface area ternary alloys, PtMCo/C (M = Cr, Mn, Fe, Ni, Cu) with enhanced electrocatalytic activity and durability for PEM fuel cell applications	International Journal of Hydrogen energy	41	9320-9331	2016	3.313
L. Cindrella , S.Prabhu	CuO-PANI nanostructure with tunable spectral selectivity for solar selective coating application	Applied Surface Science	378	242-255	2016	3.150
N. Mohan, L.	Direct synthesis of	Materials	40	361-368	2015	2.264

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Cindrella	Fe-ZSM-5 zeolite and its prospects as efficient electrode material in methanol fuel cell	Science in Semiconductor Processing				
K. Mohanraju, L. Cindrella	Electrocatalytic activity of Mn/Cu doped Fe ₂ O ₃ -PANI-rGO composites for Fuel cell applications	RSC Adv.	5	39455-39463	2015	3.289
K. Mohanraju, V. Sreejith, R. Ananth, L. Cindrella ,	Enhanced electrocatalytic activity of PANI and CoFe ₂ O ₄ /PANI composite supported on graphene for fuel cell applications	J. Power Sources	284	383-391	2015	6.227
R.Venkatesan, L. Cindrella	Semiconducting composite of chalcone-bridged polythiophene and titania, its ammonia vapor sensing property	Materials Science in Semiconductor Processing	34	126-137	2015	2.264
K. Mohanraju, L. Cindrella	Impact of alloying and lattice strain on ORR activity of Pt and Pd based ternary alloys with Fe and Co for proton exchange membrane fuel cell applications	RSC Adv.	4	11939-11947	2014	3.289
L. Cindrella , H.Z. Fu and Y.S. Ho	Global thrust on fuel cells and their sustainability – an assessment of research trends by bibliometric analysis	International Journal of Sustainable Energy	33(1)	125–140	2014	
Jayasree, K. Mohanraju and L. Cindrella	Synthesis of Platinum-Polyaniline composite, its evaluation as a performance boosting interphase in the electrode assembly of Proton Exchange Membrane Fuel Cell	Applied Surface Science	265	78–87	2013	3.150
Jayasree, R. Chandrasekar, L. Cindrella	Synthesis and characterization of polypyrrole-platinum composite for use as electrode material	Polymer Composite	33(9)	1652–1657	2012	2.004
L. Cindrella	Polypyrrole-platinum composite, a potential gas	SPE, Plastics research online	1	1-2,	2012	

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	electrode material					
A. Arvay, E. Yli-Rantala, C.-H. Liu, X.-H. Peng, P. Koski, L. Cindrella , P. Kauranen, P.M. Wilde, A.M. Kannan	Characterization techniques for gas diffusion layers for proton exchange membrane fuel cells – A review	J. Power Sources	213	317-337	2012	6.227
T. R. Heera, L. Cindrella	PbS/CoS-Pani composite semiconductor films	Materials Science in Semiconductor Processing	14	151-156	2011	2.264
L. Cindrella , A.M. Kannan	Development and evaluation of Gas Diffusion Layer using paraffin wax carbon for Proton Exchange Membrane Fuel Cells	Fuel Cells	10	563-566	2010	3.149
T. R. Heera, L. Cindrella	Synthesis and characterization of NiS/MnS core-shell embedded conducting Polyaniline composite for photovoltaic application	International Journal of Polymeric Materials	59(8)	607-621	2010	
T. R. Heera, L. Cindrella	Molecular orbital evaluation of charge flow dynamics in natural pigments based photosensitizers	Journal of Molecular Modeling	16(3)	523-533	2010	1.438
T. R. Heera, L. Cindrella	Evaluation and visualisation of molecular orbitals of natural pigments by density functional theory for their application in photoelectrochemical devices	Journal of Molecular Simulation	36	1-4	2009	1.678
L. Cindrella , T. R. Heera	Wide spectrum responsive Polyaniline based solid state solar cells	Journal of Bionanoscience	3	124-130	2009	1.30
L. Cindrella , A.M. Kannan, J.F. Lin, K. Saminathan, Y. Ho, C.W. Lin, J. Wertz	Gas Diffusion Layer for Proton Exchange Membrane Fuel Cells – a Review	J. Power Sources	194	146-160	2009	6.227
L.	Membrane Electrode	J. Power	193	447-453	2009	6.227

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Cindrella A.M. Kannan	Assembly with doped Polyaniline Interlayer for Proton Exchange Membrane Fuel Cells under Low RH Conditions	Sources				
L. Cindrella, A.M. Kannan, R. Ahmad and M. Thommes	Surface modification of Gas Diffusion Layers by inorganic Nanomaterials for Proton Exchange Membrane Fuel Cells	Int. J. Hyd. Energy	34	6377-6383	2009	3.313
L. Cindrella, Alan Dyer	Ion exchanged and Salt Hydrates Encapsulated Zeolites for Solar Refrigeration	Solar Energy Materials and Solar Cells	93	161-166	2009	4.630
A.M. Kannan, L. Cindrella, L. Munukutla	Functionally Graded Nano-porous Gas Diffusion Layer for Proton Exchange Membrane Fuel Cells under Low Relative Humidity Conditions	Electrochimica Acta	53	2416-2422	2008	4.803
L. Cindrella	The real utility ranges of the solar selective coatings	Solar Energy Materials and Solar Cells	91(20)	1898-1901	2007	4.630

(B) Conferences/Workshops/SymposiaProceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year
L.Cindrella	Conducting polymer supported non-platinum catalysts for proton exchange member fuel cell	International Conference on Business, Healthcare, Applied science and Engineering		Applied sciences	Lynbrook, USA	2016
L,Cindrella, Jayasree	Novel interphase of supported bimetallic composite to boost the	Euro-Mediterranean Hydrogen technologies conference	66-67	Hydrogen technologies	Taormina, Italy	2014

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	performance of Proton Exchange Membrane Fuel cell					
Cindrella L, Jayasree	New strategy for enhanced performance and reduced requirement of platinum in PEM fuel cell	National Convention of Electrochemists		Electrochemistry	MKU, Madurai	2014
Cindrella L, Jayasree	Nickel and cobalt incorporated polymer composites as performance boosting interlayers in PEM fuel cells	Indo-US workshop	8-11	Nano- structured electronic Materials: challenges & relevance to electronics & energy research	Thrissur, Kerala	2013
Mohanraju, K, Cindrella,	Synthesis of highly conducting carbon from Natural sources for PEM Fuel cells applications	International Conference on Sustainable utilization, management and conservation of bioresources	10 - 12	Bioresources	St.Joseph's college, Trichy	2013
Mohanraju, K, Cindrella, L.	Solvothermal Synthesis of PtNiCo Trimetallic Alloy for Oxygen Reduction Reaction in PEM Fuel Cells	ELAC-2013		Advances and Recent Trends in Electrochemistry	Hyderabad	2013
Jeyachandran R, Cindrella L	Structure-Activity relationship of Indicine	Proceedings of the XVIII International Botanical		Botanical Congress	Melbourne, Australia	2011

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	N Oxide and its functional derivatives by Molecular Orbital evaluation and charge flow dynamics	Congress				
L. Cindrella	Polymer stabilized core-shell sulphides - Significance of their space confinement and nano scale	International conference on Nano technology & Ultrasound		Nano technology & Ultrasound	Trichy	2011

(C) Books & Monographs

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