



**National Institute of Technology Karnataka, Surathkal  
Srinivasnagar - 575 025, India**



### **Curriculum Vitae**

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**Dr. A. C. HEGDE** is a M.Sc. graduate with Ph. D. from Mangalore University in 1993. He joined NITK, Surathkal as Lecturer, and he excelled to the position of Professor in the department from time to time. He served successfully as Head of the Department of Chemistry for three years at NITK, Surathkal (2011-2014), and presently he is pursuing his research in allied fields of electrochemistry.

He is an electrochemist by research, and his interest includes electro-fabrication of multilayer coatings for better corrosion protection. His interest also includes development of electrode materials for HER and OER and super capacitor applications. Presently his interest lies in understanding the effect of inducing magnetic field on electroplating, called *magneto-electrolysis*. He completed many R&D projects, and guided 5 Ph.D. students, and 2 have submitted, 17 B. Tech. and 15 M.Sc. projects. He has about 102 research papers to his credit including 52, published in peer reviewed Journals of National and International repute.

He has completed two major projects from DST and TEQIP. He has organized 3 Workshops, attended 13 Seminars/Symposia, 6 International and 20 National conferences. He visited many countries like USA, Israel, Malaysia, Singapore and Egypt for conferences/research interactions. He is a Life member of various Professional bodies like, ISTE, SAEST, ISEAC, ICC, IIM and MRSI. His research publications have seen commercial value in USA for production of multilayer coatings in industrial scale. Recently he was invited by University of Washington, Seattle (USA) and 'Modumetal Inc.' to deliver a Lecture on multilayer alloy coatings, and to have MOU for collaboration.

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### Curriculum Vitae

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1. Name in Full : **PROF. A. CHITHARANJAN HEGDE**
2. Father's Name : V. RAJEEVA HEGDE
3. Date of Birth : 22 - 07 - 1964
4. Sex : Male
5. Nationality : Indian
6. Marital Status : Married
7. Present Address : **Dr. A. Chitharanjan Hegde**  
Professor and Former Head  
Department of Chemistry  
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8. Designation : **PROFESSOR**
9. Specialization : **PHYSICAL CHEMISTRY**
9. Area of Research : Electrodeposition of monolayer and multilayer alloy coatings, Corrosion protective coatings, Magneto-electrodeposition, Sono-electrodeposition

### 10. Educational qualification

M.Sc. (Chemistry) - Mangalore University (1989)

Ph.D. (Chemical Kinetics and Reaction Mechanism) - Mangalore University (1993)

## 11. Professional Experience (teaching/Subjects taught)

### a) Teaching Experience

S. No.	Organization	Designation	From	To	Period	Nature
1.	Mangalore University	Lecturer	17-12-1994	15-4-1995	4months	Temporary
2.	N.I.T.K., Surathkal	Lecturer	8- 9-1995	8-9-1999	4 years	Permanent
3.	N.I.T.K., Surathkal	Sr. Grade Lecturer	8- 9-1999	8-9-2002	3 years	Permanent
4.	N.I.T.K., Surathkal	Assistant Professor	8-9-2002	8.9.2005	3 years	Permanent
5.	N.I.T.K., Surathkal	Associate Professor	1-1-2006	1-1-2010	4 years	Permanent
6.	N.I.T.K., Surathkal	Professor	1-1-2010	Till date	-	Permanent

- b) Subjects Taught**
1. Physical chemistry -I Sem. M. Sc. (Chemistry)
  2. Advanced Electrochemistry - IV Sem. M.Sc. (Chemistry)
  3. Advanced Instrumental methods of Analysis- I Sem. M. Sc. (Chemistry)
  4. Physical Chemistry Lab - III Sem. M.Sc. (Chemistry)
  5. Instrumental Methods of analysis Lab. (B.Tech.)
  6. Engineering Chemistry, Theory & Lab (B.Tech.)

### 12. Academic Awards:

1. DST's SERC Visiting Research Fellowship in the Year 2004-05.
2. University Research Fellowship in the year 1990-1992.

### 13. Guidance of Projects/Dissertation:

- i) B. Tech. : 06 : 10 M.Sc.: 13  
ii) Ph.D. : 5 (Awarded ) + 2 (submitted) + 2 (in progress)

S. No	Name of the Student	Reg. Year and status	Thesis Title	Other supervisor	Completed/ ongoing
1.	Thangaraj V.	CY04 F01	Electrodeposition and Characterization of Zn-Fe group metal alloys	None	Awarded
2.	Venkata-krishna K.	CY06P05	Electrolytic synthesis and characterization of some Zn-Transition metal alloys	None	Awarded
3.	Ramesh Bhat	CY07P01	Development of characterization of compositionally modulated multilayered alloys of zinc based alloys	None	Awarded

4.	Yogesha S.	CY08P01	Development of Nanostructured multilayer coatings for Industrial Applications	None	Awarded
5.	Pavithra G. P	CY08F01	Electrochemical development and characterization of mutual alloys of iron group elements	None	Awarded
6.	Yathis Ullal	CY10F04	Electrodeposition and characterization of composition modulated multilayer coatings	None	Submitted
7.	Vaishaka R. Rao	CY11F08	Electro fabrication of some binary and ternary alloy coatings and their characterization	None	Submitted
8.	Sandhya Shetty S.	CY13F04	Electrolytic development of Ni-based alloy coatings and their characterization	None	In progress
9.	Liju Elias	CY13F06	A study on structure-property relation of electrodeposited alloy coatings using single bath technique	None	In progress

#### 14 No. of Research projects completed:

S. No	Title of Project	Funding Agency	Budget INR (Lakhs)	Year	Name of Guide/ investigator	Status
5.	Development of Nanostructured multilayer coatings for Industrial Applications	DST, Govt. of India.	29.78	2007-10	Dr. A. C. Hegde	completed
4.	Development of Nickel Nanocoatings for better Corrosion and Tribological Properties’.	TEQIP sponsored under Networking with NIT, Trichy	2.50	2007-08	Dr. A. C. Hegde and Dr. S. Natarajan	completed
3.	Electrodeposition and characterization by Electrochemical Methods of Analysis	TEQIP, MHRD, Govt. of India	0.15	2005-06	Prof. V. S. Raja, IITB, Mumbai.	completed
2.	Development and Characterization of Compositionally Modulated Multilayered Materials by Electrolytic Method	DST’s SERC Visiting Fellowship at IIT Kanpur	0.28	2004-05	Prof. Rajiv Shakhar, IIT, Kanpur	completed

1.	Non cyanide Electroplating of Zinc	NITK, Surathkal	0.15	2001-02	A.C. Hegde	completed
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### 15. Titles of B. Tech projects guided: 6

S. No	Title of Project	Funding Agency	Budget in INR	Year	Name of P. investigators	Status
6.	Production of Nanocoatings for improved corrosion resistance	KSCST, Bangalore	3,500//	2007-08	A.C. Hegde	Completed
5.	Corrosion behavior of electrodeposited Zn-Ni Alloy	KSCST, Bangalore	5,000/	2004-05	A.C. Hegde	Completed
4.	Studies on the production of Nickel Aluminide by Powder Metallurgy with Electrodeposited Nickel Powder.	-	-	2003-04	A. C. Hegde & K.R.Udupa	Completed
3.	Zinc-Nickel Alloy Plating	-	-	2003-04	A. C. Hegde	Completed
2.	Alloy Plating- A viable alternative to conventional metal plating	KSCST, Bangalore	5,000/	2003-04	A.C. Hegde	Completed
1.	Hull Cell–An Analytical Tool in electroplating	KSCST, Bangalore	2,500/	2002-03	A. C. Hegde	Completed

### 16. No. of projects guided under Summer Internship Program (SIP)- 3

S. No.	Name and address of the student	Title of the projects	Name of other Supervisor	Remarks
1.	<b>Mr. Ranjeesh T.K</b> (Reg. No. 08313023., III Sem M.Sc. from Gandhigram Rural University, Dindigul, June, 2009.	Electrodeposition and corrosion behavior of multilayer coatings	None	Completed
2.	<b>Miss Sreekala K.</b> Reg. No. 138225, from III Sem M.Sc., St. Aloysius College, Mangalore, June, 2014.	Electrodeposition of high performance multilayer alloy coatings	None	Completed

3.	<b>Miss Sreeja K.C.</b> Reg. No. 1382071, from III sem M.Sc., St. Agnes College, Mangalore, June, 2014.	Electrofabrication of multilayer Fe-Ni alloy coatings for better corrosion protection	None	Completed
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### 17. No. of Projects Guided at M. Sc./M. Tech., level: 15

Sr. No	Name of students	Title of the Project/Thesis	Name of other Supervisor	Remarks
1.	Aparna P.I. (Reg.No.07CY02),	Composition modulated multilayer Zn-Fe alloy coatings-Synthesis and Characterization	None	completed
2.	Yathish Ullal (Reg. No. 08CY21)	Development of nanostructured composition modulated multilayer Zn-Ni alloy coatings and their characterization	None	completed
3.	Sharanya P. (Reg. No. 08CY11)	Synergistic inhibitive effect of Thiamine hydrochloride and Zn <sup>+2</sup> ions on acid corrosion of mild steel	None	completed
4.	Prafulla K.R. (Reg. No. 08CY07)	Ion induced passivity during corrosion of aluminium	None	completed
5.	Vandana R. (Reg.No.08PM09F )	Electrodeposition and characterization of Zn and Zn-composite coatings	Prof. K.L. Bhat	completed
6.	Sowmya (Reg. No. 09CY21)	Corrosion prevention of mild steel by inhibitors	None	completed
7.	Anusha N.S. Reg. No. 09CY26)	Corrosion behavior of steel used in cold storage pans under different salt solutions	None	completed
8.	Shwetha V. Pai (Reg. No. 10CY17)	Corrosion Inhibition of mild steel using p-aminophenol	None	completed
9.	Navyashree G.N. (Reg. No. 10CY06)	Production of layered coatings of Zn-Ni alloy for better corrosion protection of mild steel	None	completed
10.	Sunitha N. (Reg. No. 10CY20)	Corrosion Inhibition of mild steel using sodium molybdate	None	completed
11.	Bindiya P.N. Reg. No. 11CY04	Electrodeposition of Zn-Ni Multilayer coatings and their Corrosion performance	None	completed

12.	Sowmya Reg. No.11CY19	Corrosion inhibition study of glycine and glycyL glycine for mild steel in Nacl medium	None	completed
13.	Ram Kumar V. Reg. No. 12CY11	Study on electrocatalytic behaviour of Ni-Mo alloy coating	None	completed
14.	Tejas V. Watve Reg. No. 12CY18	Electrodeposition and characterization of Zinc	None	completed
15.	Serin P. Reg. No. 12CY14	Effect of magnetic field on electrodeposition of Ni and its corrosion performance	None	completed

## 18. Number Research Papers Published:52

### Till 1996

1. Mechanism of Oxidation of Thiocarbohydrazide by Acid Bromate in Aqueous and Partial Aqueous Media: A Kinetic Study, *J. Indian Chem. Soc.*, B.T. Gowda\*, V. Pardhasaradhi and **A. Chitharanjan Hegde** (1993), 70, 112-115.
2. Kinetics and Mechanism of Oxidation of Thiocarbohydrazide and its Metal Complex by Acid Bromate in Aqueous and Partial Aqueous Media, *Chin. J. Chem.*, Pardhasaradhi V., **A. Chitharanjan Hegde** and B.T. Gowda\*, (1993), 435-445.
3. Kinetics and Mechanism of Chlorination of Aryl Schiff Bases by Chloramine -T in Aquo-Methanol Medium, *Oxidation Commun.*, **A. Chitharanjan Hegde** and B.T. Gowda\*, (1993) 156-168.
4. Kinetics and Mechanism of Oxidative Decarboxylation of Amino acids Assisted by bromamine-T in the Presence of Chloride *Oxidn. Comm.*, **A. Chitharanjan Hegde** and B. T. Gowda\*, (1996), 19, 293-309.

### Till 2009

5. Electrodeposition and Characterization of Zinc–Nickel Alloy, V. Thangaraj and **A. Chitharanjan Hegde\***, *Bulletin of Electrochemistry*, (2006), 22(2), 49.
6. Anomalous Codeposition and Characterization of Zn-Fe Alloys, **A.Chitharanjan Hegde\*** and Thangaraj, *Bulletin of Electrochemistry*, (2006) 22, 393.
7. Electrodeposition and compositional behavior of Zn-Ni alloy, Thangaraj V and **A. Chitharanjan Hegde\***, *Indian Journal of Chemical Technology*, (2007) 14, 245.

8. Effect of bath composition and operating parameters on deposit character and corrosion behavior of Zn-Ni alloy- K Venkatakrishna, V Thangaraj and **A Chitharanjan Hegde\***, *Indian Journal of Chemical Technology*, (2008) 15, 252.
9. Development of Zn-Co alloy coatings by pulsed current from chloride bath, V Thangaraj, N K. Udayashankar and **A. Chitharanjan Hegde\***, *Indian Journal of Chemical Technology*, (2008)15, 581.
10. Production of nanocoatings on mild steel for improved corrosion resistance, Amoghavarsha M, Abhijith Kini and **A. Chitharanjan Hegde\***, *Indian Institute of Metals, Metal News*, (2008), 1(6), 38.
11. Surface Modification by Compositionally Modulated Multilayered Zn-Fe Alloy Coatings, V. Thangaraj, K. Ravishankar, **A. Chitharanjan Hegde\***, *Chinese Journal of chemistry*, (2008), 26, 2285-2289.
12. Corrosion behavior of composition modulated multilayer Zn-Co electrodeposits produced using a single bath technique, V. Thangaraj, N. Eliaz, **A. Chitharanjan Hegde\***, *J Appl Electrochem.*, (2009), 39, 339-345.

## **2010**

13. Electrodeposition and characterization of Zn-Ni alloy from sulphate bath, Ramesh S. Bhat and **A.Chitharanjan Hegde\***, *Journal of Indian Council of Chemists*, (2010), 27(1), p.4-9.
14. Electrolytic preparation of cyclic multilayer Zn-Ni alloy coating using switching cathode current densities", Venkatakrishna K. and **A. Chitharanjan Hegde\***, *Journal of Applied Electrochemistry*, (2010) 40: 2051–2059.
15. Electrodeposition of high performance multilayer coatings of Zn-Co using triangular current pulses, Yogesha S. and **A. Chitharanjan Hegde\***, *Trans. of Institute of Metal Finish*, (2010) 88(6), 317-323.
16. Electroplating and characterization of Zn-Ni, Zn-Co and Zn-Ni-Co alloys, N. Eliaz\*, K. Venktatakrishna and **A. Chitharanjan Hegde**, *Surface and Coatings Technology*, (2010) 205(7), 1969–1978.
17. Electrodeposition of Zn-Ni, Zn-Fe and Zn-Ni-Fe alloys, **A. Chitharanjan Hegde\***, N.Eliaz, K. Venktatakrishna, *Surface and Coatings Technology*, (2010) 205(7) 2031-2041.
18. Optimization of bright zinc-nickel alloy bath for better corrosion resistance, Yogesha S. and **A. Chitharanjan Hegde\***, *Transactions of Indian Institute of Metals* (2010), 63(6), 841-846.



## 2011

19. Development of nano-structured Zn-Ni Multilayer and their Corrosion Behaviors, Yogesha S., Pavitra G.P., Ramesh Bhat S., Venkatakrishna K., Yathish Ullal, **A.Chitharanjan Hegde\***, *Synthesis and Reactivity in Inorganic, Metal-Organic, and Nano-Metal Chemistry*, 41(1), (2011), 65-71.
20. Development of anti-corrosive multilayered coatings of zinc-nickel alloy, Yogesha S. and **A. Chitharanjan Hegde\***, *Anticorrosion methods and materials*, (2011), 58(2), 84-89.
21. Optimization of deposition conditions for development of high corrosion resistant Zn-Fe alloy multilayers, Yogesha, S. and **A. Chitharanjan Hegde\***, *Journal of Materials Processing Technology*, (2011) 211, 1409-1415.
22. Development of Nano-Structured Cyclic Multilayer Zn–Ni Alloy Coatings Using Triangular Current Pulses, Ramesh S. Bhat and **A. Chitharanjan Hegde\***, *Surface Engineering and Applied Electrochemistry*, (2011), Vol. 47, No. 2, pp. 112–119.
23. Development of Composition Modulated Multilayer Alloy Coatings and their Corrosion Behavior, Yogesha SUSBBIAIAH and **Ampar Chitharanjan HEGDE\***, *Journal of Metals, Materials and Minerals*, (2011), Vol.21 No.1 pp.83-92, 201.
24. Corrosion Behavior of Electrodeposited Zn-Ni, Zn-Co and Zn-Ni-Co Alloys, Ramesh S. Bhat and **A. Chitharanjan Hegde\***, *Anal. Bioanal. Electrochem.*, (2011), Vol. 3(3), 302 – 315.
25. Composition modulated multilayer Zn-Fe alloy coatings on mild steel for better corrosion resistance, Venkatakrishna K and **A. Chitharanjan Hegde\***, *Journal of Materials and Manufacturing process*, (2011) 211, 1409-1415.
26. Corrosion resistant Zn-Co alloy coatings deposited using saw-tooth current pulse, Yogesha S. and **A. Chitharanjan Hegde\***, *Bulletin of Materials Science*, (2011), 34 (7), 1699-1706.
27. Effect of Current Density on Deposit Characters of Zn-Co Alloy and their Corrosion Behaviors, Yogesha S. and **A. Chitharanjan Hegde\***, *Synthesis and Reactivity in Inorganic, Metal-Organic, and Nano-Metal Chemistry*, (2011) 41 (7), 405-411.
28. Optimization of Deposition Conditions for Bright Zn-Fe Coatings and its characterization, Bhat Ramesh, Udaya Bhat K and **Hegde Chitharanjan A\***, *Protection of Metals and Physical Chemistry of Surfaces*, (2011), vol. 47(5) pp. 645-653.

## 2012

29. Surface modification by multilayered Zn-Co alloys coatings, Yogesha, S. and **A. Chitharanjan Hegde\***, *Surface Engineering*, (2012), Vol. 28(1) 49-56.
30. Magnetic property and corrosion resistance of electrodeposited nanocrystalline iron-nickel alloys, G.P. Pavithra, **A. Chitharanjan Hegde\***, *Applied Surface Science*, (2012) 258, 6884-6890.
31. Effect of surfactant on high capacitance of galvanostatically deposited MnO<sub>2</sub>, Suhasini\* and **A. Chitharanjan Hegde**, *Journal of Electroanalytical Chemistry*, (2012) 676, 35–39.
32. Electrodeposition of cyclic multilayer Zn-Co films using square current pulses and investigations on their corrosion behaviors, Ramesh Bhat and **A. Chitharanjan Hegde\*** *Journal of Minerals and Materials Characterization and Engineering*, (2012) 11, 896-903.
33. Electroplating and Corrosion study of Zn-Co, Zn-Fe and Zn-Co-Fe Alloys, Ramesh S. Bhat and **A. Chitharanjan Hegde\***, *Anal. Bioanal. Electrochem.*, (2012) Vol. 4, No. 6, 593 – 609.
34. Development of Nanostructure Multilayer Co-Ni Alloy Coatings for Enhanced Corrosion Protection G. P. Pavithra and **A. Chitharanjan Hegde\***, *Anal. Bioanal. Electrochem.*, Vol. 5, No. 1, 2013, 59 – 73.
35. Production of Layered Coatings of Fe–Ni Alloy for Enhanced Corrosion Protection, G. P. Pavithra and **A. Chitharanjan Hegde\***, *Surface Engineering and Applied Electrochemistry*, 2013, Vol. 49, No. 3, pp. 261–266.
36. Corrosion Protection of Electrodeposited Multilayer Nanocomposite Zn–Ni–SiO<sub>2</sub> Coatings, Yathish Ullal and **A. Chitharanjan Hegde\***, *Surface Engineering and Applied Electrochemistry*, 2013, Vol. 49, No. 2, pp. 161–167.
37. Layered coating of Zn-Co alloys on mild steel using triangular current pulses for better corrosion protection, Ramesh Bhat, Udaya Bhat, and **A. Chitharanjan Hegde\***, *Transactions of the Indian Institute of Metals*, (2012) *Trans Indian Inst Met (June 2013)* 66(3):193–199.
38. Hardness and electrochemical behavior of ceramic coatings on inconel, C. Sujaya, H.D. Shashikala, G. Umesh and **A. Chitharanjan Hegde**, *J. Electrochem. Sci. Eng.* 2(1) (2012) p.19-31.

### **2013**

39. Magnetically induced orientation of Zn-Ni alloy coatings for better corrosion protection, *Journal of Magnetism and Magnetic Materials*, (2013) 345, 48–54.

40. Electrofabrication of nanostructured multilayer coatings for better corrosion protection, R. Vaishaka, **A. Chitharanjan Hegde\***, published in *Nanosystems: Physics, Chemistry, Mathematics*, 2013, 4 (3), P. 409–416.
41. Nanofabricated multilayer coatings of Zn-Ni alloy for better corrosion protection, Vaishaka R. Rao and **A. Chitharanjan Hegde\***, *Protection of Metals and Physical Chemistry of Surfaces*, 2013, 49(6), pp. 693–698.
42. Synergistic Effect of Gelatin and Glycerol on Electrodeposition of Zn-Ni Alloy, Vaishaka R. Rao **A. Chitharanjan Hegde\***, *Metallurgical and Materials Transaction-B*, (2013) 44 (5) p.1236-1242.
43. Effect of heat treatment on structure and properties of multilayer Zn-Ni alloy coatings, Vaishaka R. Rao, **A. Chitharanjan Hegde\*** and K.Udaya Bhat, *J. Electrochem. Sci. Eng.* **3(4)** (2013) 137-149.
44. Vaishaka R. Rao, **A. Chitharanjan Hegde\*** and K. Udaya Bhat. (2013). ‘‘Effect of heat treatment on structure and properties of multilayer Zn-Ni alloy coatings.’’ *J. Electrochem. Sci. Eng.*, (2013) 3, 137-149.
- 2014**
45. Electrodeposition and electro-catalytic study of nanocrystalline Ni–Fe alloy, Yathish Ullal and **A. Chitharanjan Hegde\***, *International Journal of Hydrogen Energy*, (2014) 39 (7), pp.10485–10492.
46. Magnetically induced codeposition of Ni-Cd alloy coatings for better corrosion protection’, Vaishaka R. Rao and **A. Chitharanjan Hegde\*** *Industrial and Engineering Chemistry Research*, (2014), 23(6), 2067-2074.
47. Vaishaka R.Rao and **A. Chitharanjan Hegde\***, Role of cadmium on corrosion performance of Zn-Ni alloy coatings, *Surface Engineering and Applied Electrochemistry* (2014), Vol. 50, No. 1, pp. 63–71.
48. Electrodeposition and electro-catalytic study of nanocrystalline Ni–Fe alloy, Yathish Ullal and **A. Chitharanjan Hegde\***, *International Journal of Hydrogen Energy*, 2014, 39 (7), pp.10485–10492.
49. Effect of induced magnetic field on electrocrystallisation of Zn-Ni alloy and their corrosion study, Vaishaka R. Rao and **A. Chitharanjan Hegde\***, *J. Mater. Eng. Perform.* (2014), 23, 2067-2074.

50. Electrofabrication of multilayer Fe–Ni alloy coatings for better corrosion protection, Yathish Ullal and **A. Chitharanjan Hegde\***, *Appl. Phys. A* (2014) 116:1587–1594.
51. Vaishaka R. Rao, **A. Chitharanjan Hegde**. “Effect of additives and operating parameters on deposit characters of Ni-Cd alloy.” *J. Electrochem. Plat. Technol.* (2014), DOI: 10.12850/ISSN2196-0267.JEPT3300.
52. Electrochemical deposition and characterization of nanocrystalline Co-Ni coatings, Yathish Ullal and **A. Chitharanjan Hegde**, *Journal of Electrochemistry and Plating Technology*, DOI: 10.12850/ISSN2196-0267.JEPTXXXX.

## **20. Best Papers Award in conference presentation: 5**

1. Production of Nanocoatings on Mild Steel for Improved Corrosion resistance’ by Amoghavarsha M, Abhijith Kini and **A. Chitharanjan Hegde\*** in Students' Session of 62<sup>nd</sup> Annual Technical Meeting(ATM) held at India Expo Centre, Greater Noida, Delhi as a part of Metals Asia 08 held during 13<sup>th</sup> -16<sup>th</sup> November, 2008.
2. Electrolytic Synthesis and Characterization of Nanostructured Multilayer coatings of Zn-Ni-Fe alloy’ V. Thangaraj and **A. Chitharanjan Hegde\*** in the International Conference on Functional Materials for Advanced Technology (ICFMAT-2009) held on 29<sup>th</sup> and 30<sup>th</sup> January 2009 at Velammal Engineering College, Chennai.
3. Electrodeposition of multilayered Zn-Ni alloy coatings using square-triangular-saw-tooth current pulses and their corrosion behaviors. Yogesha, S. and **A. Chitharanjan Hegde\***, in the ‘3<sup>rd</sup> National symposium for Materials Research Scholars (MR-10) and Workshop on Advanced Characterization Techniques’ held at IIT Bombay during 6<sup>th</sup> – 8<sup>th</sup> May, 2010.
4. Effect of current pulses on corrosion behavior of composition modulated multilayer coatings of Zn-Co alloy, Yogesha, S. and **A. Chitharanjan Hegde\***, in ‘International Conference on CORCON- 2010, East Asian and Pacific Area Corrosion Conference and Expo during 23-26, September 2010 at Goa.
5. Cadmium catalyzed electrodeposition of Zn-Ni coating, Vaishaka R. Rao and **A. Chitharanjan Hegde**, presented in Fifth ISEAC Triennial International Conference on Advances and Recent Trends in Electrochemistry (ELAC-2013) to be held at Hyderabad during 16-20<sup>th</sup> January, 2013.

## 21. Number of Papers presented in International conferences - 09

1. *Effect of Back Contact on Giant Magnetoresistance of Electrodeposited Co/Cu Multilayers*, Rajiv Shekhar\*, Debabrata Pradhan, T.Sripadmini and **A. Chitharanjan Hegde\***, in conference on Nanoscience and Technology (ICONSAT-2006) held at New Delhi during 16-18 March, 2006.
2. *Electrodeposition of Cost Effective Black Nickel Solar Absorber Coatings*, A. Chitharanjan Hegde and Thangaraj V, in conference on Electrochemical Power System (ICEPS-2 ) held at Hyderabad from December 20<sup>th</sup> to 21<sup>st</sup> 2006.
3. *Electrodeposition and Characterization of Zn-Fe Alloy*, **A. Chitharanjan Hegde\*** and Thangaraj V, in Symposium on Advances in Electrochemical Science and Technology (ISAEST-8) held during November 28-30, 2007 at Goa, India.
4. *Electrolytic Synthesis Nanostructured Multilayer coatings Metal Alloys'* **A. Chitharanjan Hegde\*** and Thangaraj V , in conference *Nanotech Insight - 2007* held at Luxor, Egypt during 10-17, March 2007.
5. *Zn- Co alloy deposition by continuous and pulsed current'* **A. Chitharanjan Hegde\*** and Thangaraj V presented in the International symposium for Research Scholars on Metallurgy, Materials Science and Engineering held at IIT, Chennai during 18-20<sup>th</sup> December 2007.
6. *Corrosion protection of mild steel by multilayer alloy coating'*, Venkatakrishna and **A. Chitharanjan Hegde\***, in conference on Recent Advances in Industrial Electrochemical Science and Technology (ICRAIEST-2009) to be held at Mangalore University, Mangalagangothri. During 5-7 November, 2009.
7. *Surface modification by microstructured multilayer alloy coating*, K Venkatakrishna, **A. Chitharanjan Hegde\*** and N. Eliaz, in the *23rd International Conference on Surface Modification Technologies, SMT-09*, organized by IGCAR, Kalpakam, held during 2<sup>nd</sup> -5<sup>th</sup>, November 2009 at Mamallapuram, India..
8. *Micro hardness and corrosion behavior of pulsed laser deposited Al<sub>2</sub>O<sub>3</sub> Coatings*, Sujaya C, H.D. Shashikala, shelar Vikas M, G. Umesh, Yogesha, S. and **A. Chitharanjan Hegde\***, presented in conference on Recent Trends in Materials and Characterization (RETMAC-2010)' held on February 14-15, 2010 at NITK Surathkal, India.
9. Effect of current pulses on corrosion behavior of composition modulated multilayer coatings of Zn-Co alloy, Yogesha, S. and **A. Chitharanjan Hegde\***, presented in 'International

Conference on CORCON- 2010, East Asian and Pacific Area Corrosion Conference and Expo -2010 held during 23-26, September 2010 at Goa.

**22. Number of papers presented in National conferences - 50**

1. Kinetic and Mechanism of Oxidation of Aryl Schiff' Bases by Chloramine-T in Aquo-methanol Medium (A. C. Hegde and B. T. Gowda ).Paper presented at the 9<sup>th</sup> Annual conference of Indian Council of Chemists held at Gulbarga University, Gulbarga, During Dec. 21-23, 1990.
2. Mechanism of Oxidation of Hydrazides by Chloramine-T in Aqueous Methanol in Presence of Perchloric Acid : A Kinetic Study ( A. C. Hegde and B. T. Gowda). Paper presented at the 27<sup>th</sup> Annual Convention of Chemists of the India Chemical Society, held at Magadh University, Bodhagaya, during Dec.26-30, 1990.
3. Kinetics and Mechanism of Oxidation of Aryl Hydrazides by N - Chloro – N-sodio-benzaene sulphonamide in Partial Aqueous Medium (S.P.Nayak, A.C.Hegde and B.T.Gowda) P-12, p.18.Paper presented at the National Seminar on Chemical Dynamics and Reaction Mechanisms held at Kakathiya University. Warangal.During March 22-24, 1991.
4. Mechanist Investigation with Aryl Schiff Bases: Proton Inventory Studies on the Kinetics of Benzaldehyde Anils by Chloramine –T in Aquo Organic Medium (A. C. Hegde and B. T. Gowda ) O-8, p.57. Paper presented at the National Seminar on Chemical Dynamics and Reaction Mechanisms held at Kakathiya University, Warangal, during March 22-24, 1991.
5. Kinetics and Mechanism of Oxidation of Benzaldehyde Anils by Dichloramine –T in Aquo - Organic Medium (A. C. Hegde and B. T. Gowda) OO-30, p. 134.Proceedings of the 10<sup>th</sup> Annual conference of Indian Council of Chemists at Goa University, Goa, during Oct.28-30, 1991.
6. Role of Chloride in the Oxidative Decarboxylation of Amino Acids by N-Bromo –N-sodiotoluene – p - sulphonamide in aqueous Perchloric Acid: A Kinetic and Mechanistic Study (A. C. Hegde and B. T. Gowda) CDRM-15, p. G7Proceedings of 28<sup>th</sup> Annual Convention of Chemists held at Jadavpur University, Kolkotha, during Dec.17-21, 1991.
7. Role of sulfate in the Kinetics of Oxidative Decarboxylation of Amino Acids by Positive Bromine in Aqueous Acid Medium (A. C. Hegde and B. T. Gowda) Proceedings of the 29<sup>th</sup> Annual Convention of Chemists held at A.P.S. University, Rewa (M.P.), during Feb.24-27, 1993.

8. *Corrosion Potential of Zn-Ni Alloy Plating*, **A. Chitharanjan Hegde**\* presented and published in the proceedings of 'Eleventh National Conference on Corrosion Control' held at Vadodara from July 17<sup>th</sup> to 19<sup>th</sup> July 2003.
9. *Electrodeposition of Bright zinc-Cobalt alloy from acid chloride bath*, **A. Chitharanjan Hegde**\* presented in the 'Eleventh National convention of Electrochemists' held at Thiruchirapalli from December 26<sup>th</sup> to 27<sup>th</sup> 2003.
10. *Corrosion Potential of Zn-Fe Alloy Plating*, **A. Chitharanjan Hegde**\* presented and published in the proceedings of 'Twelfth National Congress on Corrosion Control to be held at Vishapatnam, during September 20<sup>th</sup> to 22<sup>nd</sup> 2004.
11. *Electrodeposition and characterization of Zn-Ni Alloy*, V. Thangaraj and **A. Chitharanjan Hegde**\* presented in the 'National Seminar on Recent Advances in Electrochemical and Surface Sciences for Industry and Society' Held at Kuvempu University during 3<sup>rd</sup> and 4<sup>th</sup> December 2004.
12. *Corrosion Behavior of Electrodeposited Zn-Ni alloy*, V. Thangaraj and **A. Chitharanjan Hegde**\* presented in National conference on 'Corrosion and Corrosion Control' held at National Institute of Technology Karnataka, Surathkal during October 28<sup>th</sup> -29<sup>th</sup>, 2005.
13. *Electrodeposition and Characterization of Zn-Co Alloy*, V. Thangaraj and **A. Chitharanjan Hegde**\* presented and published in the proceedings of National Seminar on 'Emerging Trends and New Vistas in Chemistry' held at University of Calicut, Kerala during Nov. 29-30, 2005.
14. *Electrodeposition of bright Zn-Co alloy from Sulphate bath*', V. Thangaraj and **A. Chitharanjan Hegde**\* presented in the Thirteenth National Convention of Electrochemists (NCE-13) held at Central Electrochemical Research Institute, (CECRI), Karaikudi during on May 5-6, 2006.
15. *ZnCo anomalous codeposition and its corrosion performance*' V. Thangaraj and **A. Chitharanjan Hegde**\* presented in the National conference on Current Trends in Chemical Research (CTCR-2006) during May 13-14, 2006 at Mangalore University, Mangalagangotri, Mangalore.
16. *Electrodeposition and corrosion behavior of Zn-Fe alloy*, V. Thangaraj and **A. Chitharanjan Hegde**\* presented in the Thirteenth National congress on corrosion control held at Mangalore during 12-14, October 2006.

17. *Electrochemical deposition and characterization of Zn-Ni alloys by direct and pulse current* V. Thangaraj and **A. Chitharanjan Hegde\***, presented in the Thirteenth National congress on corrosion control held at Mangalore during 12-14, October 2006.
18. *Development of compositionally modulated nanomultilayered Zn/Ni electroplates for improved corrosion resistance*, V. Thangaraj and **A. Chitharanjan Hegde\*** in the 14<sup>th</sup> National convention of Electrochemistry (NCE-14) held at IGCAR, Kalpakam during 6<sup>th</sup>-7<sup>th</sup> Dec. 2007.
19. *Electrodeposition of compositionally modulated nanomultilayered Zn/Co coatings and its correlation with corrosion protection of steel*, V. Thangaraj and **A. Chitharanjan Hegde\*** presented in the National conference 'Bangalore Nano-2007' held at Bangalore during 6-7<sup>th</sup> Dec. 2007.
20. *Electrodeposition of Zn-Fe compositionally modulated nanomultilayered coatings and their corrosion behavior*, V. Thangaraj and **A. Chitharanjan Hegde\*** presented in the National conference on Advances in Surface and interface Analysis (ASIA-2007) held at Periyar University Selam during 13-14<sup>th</sup> Dec. 2007.
21. *Semiconductor properties of electrodeposited Zn-based alloys and their corrosion resistance*, Venkatakrishna K. and **A. Chitharanjan Hegde\*** presented in the 'National Conference on Thin Film Materials and Devices' (NCTMD – 08) held at NITK, Surathkal during 2<sup>nd</sup> – 3<sup>rd</sup> May, 2008.
22. *Electrodeposition and corrosion behavior of Zn-based alloys*, Yogesha, S. Venkatakrishna, K and **A. Chitharanjan Hegde\*** accepted for presentation in the 'National Symposium on Electrochemical Science and Technology, NSET-2008, to be held at IISc., Bangalore during 18- 19<sup>th</sup> July, 2008.
23. *Electrodeposition and characterization of Zn-Ni alloy coatings over mild steel*, Yogesha, S. Venkatakrishna, K and **A. Chitharanjan Hegde\***, in 'Fourteenth National Congress on Corrosion Control' held on September 18-20, 2008 at Hotel Green Park, Hyderabad, India.
24. *Surface modification by composition modulated multilayer alloy coatings*, Yogesha, S. and **A. Chitharanjan Hegde\*** presented in the 'National Conference on 'Recent Advances in Surface Engineering(NAL50: RASE09), held at NAL, Bangalore during February 26-27<sup>th</sup>, 2009.



25. *Corrosion Properties of electrolytically synthesized Zn-Ni-Fe alloy coatings*, Yogesha, S. and **A. Chitharanjan Hegde\*** presented in the National symposium for Materials Research Scholars, MR-09 held at IITB during 7-9<sup>th</sup> May, 2009.
26. *Composition modulated multilayer coatings - A promise in surface engineering*, Ramesh S. Baht and **A. Chitharanjan Hegde\***, in the National Symposium on Electrochemical Science and Technology, Bangalore held during July 17-18, 2009.
27. *Anticorrosive composition graded multilayer Zn-Ni alloy coatings*. Yogesha, S. Venkatakrishna, K and **A. Chitharanjan Hegde\***, presented in ‘National symposium on Electrochemical Science and Technology, NSET-2009’ held on July 17-18, 2009 at IISc, Bangalore, India.
28. *Composition modulated multilayer coatings-a promise in surface engineering*, Ramesh S. Bhat and **A. Chitharanjan Hegde\***, in the National Symposium on Electrochemical Science and Technology, Bangalore held during July 17-18, 2009.
29. *Development of multilayer coating of Zn/Ni alloy for better corrosion resistance*, Yogesha, S. and **A. Chitharanjan Hegde\***, presented in ‘24<sup>th</sup> Indian engineering congress’ held on December 10-13, 2009 at NITK, Surathkal, India.
30. *Development of composition graded multilayer coatings of Zn-Co alloy for better corrosion resistance*, Yogesha, S. and **A. Chitharanjan Hegde\***, presented in ‘International Conference on Recent Trends in Materials and Characterization (RETMAC-2010)’ held at NITK Surathkal during February 14-15, 2010.
31. *Effect of surfactant on high capacitance of electrolytically developed MnO<sub>2</sub>*, Suhasini and **A. Chitharanjan Hegde\***, presented in the three day National Conference on Recent Trends in Chemical Research (NCRTCR-2010) held at NITK, Surathkal during 8-10 March, 2010.
32. *Development of composition modulated multilayer Zn-Co alloy coating using triangular pulses for better corrosion resistance*. Yogesha, S. and **A. Chitharanjan Hegde\***, presented in National Conference on Recent Trends in Chemical Research, NCRTCR-2010’ held on 08-10<sup>th</sup> March, 2010 at NITK, Surathkal.
33. *Electrodeposition of Multilayered Zn-Ni alloy coatings using square-triangular-sawtooth current pulses and their Corrosion behaviors*, Yogesha, S. and **A. Chitharanjan Hegde\***, in the ‘3<sup>rd</sup> National symposium for Materials Research Scholars (MR-10) and Workshop on Advanced Characterization techniques’ held at IIT Bombay during 6<sup>th</sup> – 8<sup>th</sup> May, 2010.

34. *Electrodeposited Ni-Fe coatings as electrocatalytic materials for production of hydrogen*, Pavitra G. P. and **A. Chitharanjan Hegde\*** for presentation in 9<sup>th</sup> ISAEEST conference held at Hotel Green Park, Chennai, during 2<sup>nd</sup>-4<sup>th</sup> December, 2010.
35. *Development of nano-structured multilayer coatings by electrolytic method for better corrosion protection*, Ramesh S. Bhat and **A. Chitharanjan Hegde\*** presented in International Conference on Nano-science, Nanotechnology and Advanced Materials (NANO 2010) held at Department of Chemistry, GITAM University, Visakhapatnam during Dec.17-19<sup>th</sup>, 2010.
36. *Corrosion behaviors of cyclic multilayer coatings of Zn-Ni alloy*', authored by Ramesh S. Bhat and **A. Chitharanjan Hegde\*** presented in 29th Annual conference of Indian Council of Chemists, to be held at Department of chemistry, Punjab University, Chandigarh, during 19th - 21st December-2010.
37. Study on Capacitive Characteristics of Nano-sized MnO<sub>2</sub> Developed by Different Electrochemical Methods, Suhasini Bhat and **A. Chitharanjan Hegde\***, presented in 29th Annual conference of Indian Council of Chemists, to be held at Department of chemistry, Punjab University, Chandigarh, during 19th - 21st December-2010.
38. Corrosion protection of cyclic multilayer Zn-Ni alloy coatings', Yathish Ullal and A. Chitharanjan Hegde at International conference, CORCON-2011 held during 28<sup>th</sup> Sept - 1<sup>st</sup> Oct 2011 at Mumbai.
39. Nano-structured Ni-Co multilayer coating for better corrosion protection, Pavithra G. P. and A. Chitharanjan Hegde, International conference held during 8<sup>th</sup> to 10<sup>th</sup> Dec. 2011 at Mangalore University.
40. Corrosion protection of multilayer nanocomposite Zn-Ni-SiO<sub>2</sub> coatings, Yathish Ullal and A. Chitharanjan Hegde, International conference on Nanomaterials Technology Specialized Conference-2012 at **UTM, Malaysia** held during March 6-7, 2012.
41. Effect of organic additives on deposit characters of Zn-Ni alloy, Vaishaka R.Rao and **A. Chitharanjan Hegde**, two day National Conference on 'Emerging trends in chemical research (NCETCR-2012)' held at Gitam University, Visakhapatnam during 7-8<sup>th</sup> September, 2012.
42. Electrofabrication of Nanostructured multilayer coatings for better corrosion protection, Vaishaka R.Rao and **A. Chitharanjan Hegde**, International Conference on 'Macro and

Supramolecular architectures and materials: Special Theme: Nano Systems and Applications (MAM-2012) held at Coimbatore during 21-25<sup>th</sup> November, 2012.

43. Effect of glycerol and gelatin on electrodeposition of Zn-Ni alloy on mild steel, Vaishaka R. Rao and **A. Chitharanjan Hegde**, 'Interdisciplinary symposium on Materials chemistry (ISMC-2012)' held at BARC, Mumbai during 11-15<sup>th</sup> December, 2012.
44. Cadmium catalyzed electrodeposition of Zn-Ni coating, Vaishaka R. Rao and **A. Chitharanjan Hegde**, presented in Fifth ISEAC Triennial International Conference on Advances and Recent Trends in Electrochemistry (ELAC-2013) to be held at Hyderabad during 16-20<sup>th</sup> January, 2013.
45. Electrocatalytic and corrosion behavior of electrodeposited Fe-Ni alloy coatings by Yathish Ullal and A. Chitharanjan Hegde\*, presented in Indo-US- ECM-2013 Workshop on ELECTROCATALYTIC MATERIALS *for fuel and biofuel cells* held at Department of Chemistry, Banaras Hindu University, Varanasi during Feb. 26-28, 2013.
46. Effect of magnetic field on electrodeposition of Zn-Ni alloy by *Vaishaka R. Rao and A. Chitharanjan Hegde\** presented in Indo-US-ECM-2013 Workshop on ELECTROCATALYTIC MATERIALS *for fuel and biofuel cells* held at Department of Chemistry, Banaras Hindu University, Varanasi during Feb. 26-28, 2013.
47. Electrocatalytic Activity of Nanocrystalline Ni-Fe Alloy Coatings' Yathish Ullal and A. Chitharanjan Hegde, WEACTION, January 10-11, 2014, Govinda Dasa First Grade College, Surathkal.
48. Effect of magnetic field on electrodeposition of Sn-Ni alloy coatings,' authored by Sandhya S. and A. Chitharanjan Hegde presented in International conference on Electrochemical Science and Technology 2014 held at IISc., Bengaluru, during 7-9<sup>th</sup> August, 2014.
49. Development of composition modulated multilayer Ni-W alloy on mild steel' authored by Liju Elias **A. Chitharanjan Hegde\***, presented in Seventeenth National Congress on Corrosion Control held at CECRI, Karaikudi (Tamilnadu) during August 21- 23, 2014.
50. Effect of pre-zinc coating on morphology and adhesion strength of electrodeposited copper on aluminium, Arun Augustin, Udaya Bhat K, Rajendra Udapa, and **A Chitharanjan Hegde**, presented in Seventeenth National Congress on Corrosion Control held at CECRI, Karaikudi (Tamilnadu) during August 21- 23, 2014.

**23. Number of AICTE short-term courses attended during last 5 years: 07**

1. Site investigation Techniques for Civil Engineering Constructions and Development of Engineering Geology and Geotechnology in India' held during 29<sup>th</sup> December 1997 to 10<sup>th</sup> January 1998 at NITK, Surathkal.
2. Fuzzy logic and Neural Networks in Chemical Process Automation' held during 15<sup>th</sup>-27<sup>th</sup> February 1999 in the Department of Chemical Engineering, NITK, Surathkal.
3. Component Object Technology (COM, DCOM, and CORBA) organized by Department of Computer Engineering, NITK, Surathkal. During 29<sup>th</sup> January, 2001 to 10<sup>th</sup> February, 2001.
4. Advances and Latest Trends in Engineering and Geotechnology' held at NITK from 31<sup>s</sup> December 2002 to 12<sup>th</sup> January 2003.
5. Solar Energy and its Applications (SEA) held at NITK, Surathklal from 20<sup>th</sup> January 2002 to 2<sup>nd</sup> February 2003.
6. Applications of Chemistry in Engineering and Technology' organized by Department of Chemistry, VNIT, Nagpur form October 28<sup>th</sup> to November 8<sup>th</sup>, 2003.
7. Recent Developments in Advanced Materials, organized by Department of Mechanical Engineerng, NITK Surathkal during 16<sup>th</sup>-21<sup>st</sup> June, 2008.

**24. No. of Technical Trainings undergone: 03**

1. A special Industry oriented technical course on '**Electroplating of Cu , Ni and Cr**' held at Central Electrochemical Research Center(CECRI) Karaikudi, Tamilnadu, during 31<sup>st</sup> December 2001 to 5<sup>th</sup> January 2002.
2. A special training on '**Industrial Practice of Electroplating and Metal Finishing**' held at Central Electrochemical Research Center(CECRI) Karaikudi, Tamilnadu, during 1<sup>st</sup> Nov. to 5<sup>th</sup> Nov. 2004.
3. Attended five days workshop on 'Corrosion Principles and Practice' by Prof. Digby held at IISc., Bangalore during 14<sup>nd</sup>-18<sup>th</sup> December, 2009.

**25. Number of Seminars/Symposia/Workshops attended: 10**

1. A self learning orientation course for teachers in 'Educational Technology' organized by India REC's Project and ET-CLN project at NITK, Surathkal from 25<sup>th</sup> July 1998 to 15<sup>th</sup> February 1999.
2. A concise course in 'Advanced Instrumental Chromatographic Techniques' on 6<sup>th</sup> October 2001 held at Jnana Sahyadri, Kuvempu University, Shimoga.
3. One day workshop on 'Educational Utilization of Indian Standards' organized by Standards Promotion Departments and Bureau of Indian standards, New Delhi at NITK, Surathkal on 4<sup>th</sup> September 2002.
4. A two-days training program on 'Human Resource Development programe to principals, faculty and Administrative staff in Engineering Colleges and Management Institutions' at Bangalore organized by Indian Heritage Academy (IHA), Bangalore during 22<sup>nd</sup> - 23<sup>rd</sup> August 2003.
5. One day Seminar on 'Review of R&D Activities at NITK, Surathkal' held on Aug..5<sup>th</sup>, 2005 at NITK, Surathkal organized under TEQIP, NITK, Surathkal.
6. Two Days National Workshop on 'Thin Film Materials' held at NITK, Surathkal on 23<sup>rd</sup> and 24<sup>th</sup> Sept. 2005 at NITK Surathkal organized under TEQIP, NITK, Surathkal.

7. One day Workshop on 'Industrial Corrosion, Awareness and Prevention' held at Mangalore University, Mangalagangothri on 25<sup>th</sup> February 2006, organized by Electrochem. Soc. of India, in association with Mangalore University and NITK, Surathkal.
8. One day workshop on 'Materials Characterization' held at department of Metallurgical and Materials Science of NITK on 30<sup>th</sup> March, 2007.
9. Three days International workshop on 'Advances in Surface Technology –2007 held at Chennai Trade Centre, Chennai during June 29, 30 and July 1<sup>st</sup> 2007.
10. One day Workshop on 'Awareness Program on Intellectual Property Rights (IPR)' Organized by Ministry of MSME Institute, Mangalore and NITK Surathkal on 13-10-2012.

**26. Number of Workshops/Seminars/conferences organized: 4**

1. One Week Training Program titled '**TEQIP Partnership in Rural Science Education**' for Secondary School Teachers of Udupi and DK Districts from 6-10 February 2006 at NITK, Surathkal under TEQIP's Community Service in collaboration with Department of Public Instruction of Udupi and DK Districts.
2. Three Days National workshop on '**Modern Electrochemical Techniques in Synthesis and Characterization of Advanced Materials**' held at Department of Chemistry, NITK Surathkal during 5<sup>th</sup> -7<sup>th</sup> September, 2008 under TEQIP.
3. Chairman for Organizing 3 days International conference on 'Recent Advances in Material Science and Technology- 2013 (ICRAMST-13)' at Dept. of Chemistry, NITK, Surathkal during 17<sup>th</sup> - 19<sup>th</sup> January-2013.
4. Chairman for Organizing Midyear symposium-2013 of Chemical Research Society of India (CRSI) at Dept. of Chemistry, NITK, Surathkal during 12<sup>th</sup> and 13<sup>th</sup> July, 2013.

**27. Technical Reports/Ph. D. Thesis evaluated: 12**

**28. List of Invited Lectures: 15**

1. 'Nanostructured multilayer coating - A new paradigm in electroplating' in National conference on corrosion and its control held at Holy college, Trichy on 1<sup>st</sup> Dec.2007.
2. 'Surface modification by composition modulated multilayer alloy coatings' in the AICTE sponsored short-term training program held at NITK Surathkal on 7<sup>th</sup> August, 2008.
3. 'Nanostructured Multilayer Coatings – A New Promise in Surface Engineering at Materials and nano seminar Series of Tel-Aviv University, Israel on 3<sup>rd</sup> December, 2008.
4. 'Nanostructured multilayer coatings for better corrosion resistance, in the AICTE sponsored short time course organized by Dept. of Metallurgy and Materials Science, NITK Surathkal on 17<sup>th</sup> July, 2009.
5. 'Fundamentals of Chemistry, for Primary school teachers' organized by Regional Science Park Park, Mangalore and KSCST, Karnataka, at Vijaya college, Mulki on 16<sup>th</sup> Sept. 2009.
6. 'Corrosion Protection by Nanostructure Coating' at Thagarajar College of Engineering, Madurai, organized by NCCI Karaikudi and TCE, Madurai on 22<sup>nd</sup> December, 2009.
8. 'Electrochemical deposition of nanostructure multilayer alloy coatings for high corrosion performance' at department of chemistry, Malaya University, Malaysia on March 5, 2012.
9. 'CAREER GUIDANCE TO CET STUDENTS', organized by The Hindu Education Plus for science students who had appeared for the State's common entrance test (CET), on 27<sup>th</sup> May, 2012 at Canara High School, Mangalore.

10. Electrofabrication of Nanostructured Multilayer Alloy Coatings for Enhanced Corrosion Protection sponsored Lecture at Dept. of Chemical Engineering, University of Washington (UW) Seattle, USA on topic on 1<sup>st</sup> July, 2013(sponsored by UW and Modumetal USA).
11. 'Advanced materials Research for Device Applications ' in two days workshop (TEQIP Sponsored) held at NMAMIT, Nitte on 26<sup>th</sup> July, 2013 to topic 'Production Of Nano-Laminated Multilayer Coatings And Their Applications'.
12. 'Development of high performance Ni-Cd coatings by magnetoelectrolysis- A New Approach' in 11<sup>th</sup> ISEAC-DM 2014, the International meet on Electrochemistry and its applications' organized by ISEAC, BARC, Mumbai held at Amritsar during 20<sup>th</sup> -25<sup>th</sup> February, 2014.
13. 'Development of high performance alloy coatings for industrial applications - A new approach. in one day conference on Protective coatings and corrosion prevention organized by Indian Institute of Chemical Engineers at IChE Auditorium, New Delhi on 22<sup>nd</sup> March, 2014.
14. 'Magnetoelectrolysis - A new promise in materials synthesis' in TEQIP sponsored Two days Workshop on Modern Trends in Chemical Research and Applications, held at NMAMIT, Nitte, Karkala on 11<sup>th</sup> July, 2014.
15. 'Development of multilayer coatings by magnetoelectrolysis- A new promise in material synthesis', in Department of Chemistry, Gandhigram Rural University, Gandhigram on 20<sup>th</sup> August, 2016.

### **29. Network/Joint Projects in International & National levels:**

1. One month **Research Interaction** at Biomaterials and Corrosion Laboratory, School of Mechanical Engineering, Tel-Aviv University, Ramat-Aviv, Tel-Aviv 69978 , ISRAEL with Invitation of Dr. Noam Eliaz during 12<sup>th</sup> Nov-10<sup>th</sup> Dec, 2008.

### **30. Other Academic Activities**

1. Served as **Head of the Department of Chemistry for three years (2011-2014)**.
2. Member of BOS (U G) in Chemistry, St. Aloysius College, Mangalore, 2011-2014.

### **31. Membership of Professional Bodies: (Type & Year)**

- Life Member of the Indian Society for Technical Education (ISTE) (LM 23321)
- Life Member of SAEST (CECRI), Karaikudi (LF 632)
- Life Member of Indian Society of Electro Analytical Chemistry (ISEAC) BARC, Mumbai(LM 104)
- Life Member of Indian Council of Chemists (ICC), Agra (LM 1268)
- Life Member of Indian Institute of Metals (IIM), Calcutta (LM 44724)
- Life Member of Materials Research Society of India (MRSI), Bangalore (LMB 2027)
- Life Member of Chemical Research Society of India (CRSI), Bangalore (LM 1689)
- Life Member of Electrochemical Society of India, Bangalore (LM 154)

### **33. Management & Institutional Development Elements:**

**a. Department Level**

- Engaged special coaching classes for SC/ST students in Jan.2006.
- Member, Dept. Undergraduate Program Committee
- Member, Dept. Course Co-ordination Committee
- Member, Dept. Research Progress Assessment Committee
- Involved in special coaching classes for SC/ST students in the year 2003.
- Taking the responsibilities of Instruments/equipments in the department.
- Taking the responsibilities of all assignments entrusted by the Authority

**b. Institute Levels**

- **Faculty Adviser** of ISTE Students Chapter for the year 2005-06.
- **Secretary** of FANITK for the year 2005.
- **Block-Warden** from 01-02-2001 to 31- 07-2003.
- **Block Warden** from 2-8-2007 till 14-11-2009.
- **Maintenance -Warden** from 1-8-2003 till 1-1-2005.
- **Students Counselor** in the institute from 2001-2005.
- **Staff convener of Prize Committee** of INCIDENT, NITK for the years 2001-04.
- **Executive Member of Parents–Teachers Association (PTA)**, of the institute.
- **Member in various organizing committees** constituted in connection with different seminars, conventions and conferences.

**c. Social Activities**

- **Director** of KREC Employ’s Credit Cooperative Society for the year 2006-10.
- **Vice President** of PTA of KREC English Medium School for the year 2005.
- **Various activities** of literature, Indian Culture in and around the Institute.
- **Kannada Sahitya Parishat**, Dakshina Kannada, Life Member.
- **Judge** in various Inter-College Science Exhibition and other Science events.
- **Vice President** of Parent – Teachers Association of KREC English Medium School, Surathkal for the year 2004.

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