

**Name** : **Dr. Jagannatha Nayak**  
**Designation** : **Professor and Head**  
Department of Metallurgical & Materials Engineering  
National Institute of Technology Karnataka, Surathkal – 575 025

**Academic Qualifications:**

<b>Degree</b>	<b>Board</b>	<b>Year</b>
SSLC	SE Board Karnataka	1980
PUC	PU Board Karnataka	1982
BE (Metallurgy Engineering)	KREC Surathkal	1987
M. Tech (Process Metallurgy)	I I T Bombay	1991
PhD (Metallurgical Engineering)	NITK Surathkal	2005

**Employment:**

<b>Position Hold</b>	<b>Period</b>	<b>Service Organization</b>
HoD	: 01-04-2014 to till date	
Professor	: 31-10-2010 to till date	
Associate Professor	: 31-10-2006 to 30-10-2010	National Institute of Technology
Assistant Professor	: 11-05-2005 to 30-10-2006	Karnataka
Select. Gr. Lecturer	: 31-10-2003 to 10-05-2005	
Sr Scale Lecturer	: 31-10-1998 to 30-10-2003	
Lecturer	: 07-11-1992 to 30-10-1998	

**Doctoral Thesis:** Corrosion Behaviour of Maraging Steels in Aqueous Media

**Teaching Experience:** More than 21 years at National Institute of Technology Karnataka

**Courses Taught:** Materials Characterization, Ceramics Engineering, X-ray and Electron Metallography, Heat Treatment, Phase Diagrams, Metallurgical Thermodynamics.

**Research Activities:**

- (a) Funded Project : 3 completed, 1 Ongoing
- (b) PhD Guidance : 5 Awarded, 3 Ongoing
- (c) M. Tech Project : 52 Guided and 3 Ongoing
- (d) Paper Published : 36 in Journals and 57 in Conferences

**Membership of Professional Bodies:**

1. Life member of Indian Institute of Metals
2. Life member of Institution of Engineers
3. Life member of Indian Society for Technical Education
4. Member of Indian Ceramic Society

**Journal Publications: (Most Recent First and Only Vol. Year and Page no)**

1. *Melby Chacko and Jagannath Nayak*, "Aging behaviour of 6061 Al-15 Vol % SiC composite in T4 and T6 treatments", *International Journal of Chemical, Nuclear, Metallurgical & Materials Engineering*, **8** No 3 (2014), 195-198.
2. *S. Shetty, J. Nayak and A. N. Shetty*, "Electrochemical investigation on the corrosion behaviour of Mg-Al-Zn-Mn (GA9) alloy in sodium chloride medium", *Journal for Electrochemistry and Plating Technology*, 1 (2014), 1-17.
3. *Reena Kumari P. D, Jagannath Nayak and A. Nityananda Shetty*, "Corrosion inhibition of aluminum type 6061 Al-15 vol. pct. SiC(p) composite in 0.5 M sodium hydroxide solution by 4-amino-5-phenyl-4H-1,2,4-triazole-3-thiol", *Anti-Corrosion Methods and Materials*, 61(4), (2014) 241-249.
4. *N. K. Udayashankar, S. Rajasekaran and Jagannath Nayak*, "The effect of protective coatings on the oxidation behaviour of 6061 Al/SiC composite at high temperatures", *Advanced Materials Research*, **383** (2012) 3949-3953.
5. *T. Poornima, Jagannath Nayak, and A. Nityananda Shetty*, "Effect of diacetyl monoxime thiosemicarbazone on the corrosion of aged 18 Ni 250 Grade Maraging Steel in sulphuric acid solution", *Journal of Metallurgy*, **2012** (2012) doi:10.1155/2012/723687, Article ID 723687.
6. *T. Poornima, Jagannath Nayak and A. Nityananda Shetty*, "3,4-Dimethoxy benzaldehyde thiosemicarbazone as Corrosion Inhibitor for Annealed 18Ni 250 Grade Maraging Steel in 0.5 M Sulfuric Acid", *Res. Rev. Electrochem.* 3(1) (2012) 1-11.
7. *T. Poornima, J. Nayak and A. N. Shetty*, "Corrosion inhibition of the annealed 18 Ni 250 grade maraging steel in 0.67 M phosphoric acid by 3,4-Dimethoxy benzaldehyde thiosemicarbazone", *Chemical Sciences Journal*, Vol. 2012: CSJ-69.
8. *B. S. Sanatkumar, Jagannath Nayak and A. Nityananda Shetty*, "Influence of 2-(4-chlorophenyl)-2-oxoethyl benzoate on the hydrogen evolution and corrosion inhibition of 18 Ni 250 grade weld aged maraging steel in 1.0 M sulfuric acid medium." *Int. J. Hydrogen Energy*, 37 (2012), 9431-9442.
9. *B. S. Sanatkumar, Jagannath Nayak and A. Nityananda Shetty*, "The corrosion inhibition of maraging steel under weld aged condition by 1(2E)-1-(4 - aminophenyl)-3-(2-thienyl) prop-2-en-1-one in 1.5 M hydrochloric acid medium." *J. Coat. Technol. Res.*, 9 (2012), 483-493.

10. B. S. Sanatkumar, **Jagannath Nayak** and A. Nityananda Shetty, "Corrosion behaviour of 18% Ni M 250 grade maraging steel under weld aged condition in sulfuric acid medium." *Chem. Eng. Commun.*, 199 (2012), 1610-1625.
11. Sanatkumar, B. S., **Nayak, J.** and Shetty. A. N. "Investigation of adsorption and corrosion inhibitive effect of 1(2E)-1-(4 amino phenyl)-3-(2-thienyl) prop-2-en-1-one on corrosion of weld aged maraging steel in 0.5 M sulfuric acid media." *J. Electrochem Soc. India*, **60** (2012), 153-161.
12. B. S. Sanatkumar, **J. Nayak** and A. N. Shetty, "Corrosion behaviour of 18% Ni M250 grade maraging steel under weld aged condition in hydrochloric acid medium." *Chemical Sciences Journal*, Volume 2011, CSJ-37
13. T. Poornima, **Jagannath Nayak** and A. Nityananda Shetty "Effect of 4-(N,N- diethylamino) benzaldehyde thiosemicarbazone on the corrosion of aged 18 Ni 250 grade maraging steel in phosphoric acid solution", *Corrosion Science*, **53** (2011), 3688-3696.
14. P. D Reena Kumari, **Jagannath Nayak** and A. Nityananda Shetty "3-Ethyl-4-amino-5-mercapto-1, 2, 4-triazole as corrosion inhibitor for 6061-alloy in sodium hydroxide solution." *Portugaliae Electrochimica Acta*, **29** (2011), 445-462.
15. Reena Kumari, P. D, **Jagannath Nayak** and A. Nityananda Shetty "Corrosion behavior of 6061/Al-15 vol. pct. SiC<sub>(p)</sub> composite and its base alloy in sodium hydroxide solution." *Arabian Journal of Chemistry*. DOI: 10.1016/j.arabjc.2011.12.003 (2011).
16. Reena Kumari, P. D, **Jagannath Nayak** and A. Nityananda Shetty, "3-Methyl-4-amino-5-mercapto-1,2,4-triazole as corrosion inhibitor 6061/Al-15 vol% SiC<sub>(p)</sub> Composite in 0.5 M Sodium Hydroxide Solution." *Journal of Materials and Environment Science*, **2** (2011), 387-402.
17. P. D Reena Kumari, **Jagannath Nayak** and A. Nityananda Shetty, "3-Ethyl-4-amino-5-mercapto-1,2,4-triazole as corrosion inhibitor for 6061/Al-15 vol% SiC<sub>p</sub> composite in Sodium hydroxide solution." *Synthesis reactivity in Inorganic, Metal-Organic and Nano- Metal chemistry*, **41** (2011), 774-784.
18. P. D Reena Kumari, **Jagannath Nayak** and A. Nityananda Shetty, "3-Methyl-4-amino- 5-mercapto-1,2,4-triazole as corrosion inhibitor for 6061 Al alloy in 0.5 M Sodium hydroxide." *Journal of Coatings Technology and Research*. **8** (2011) 685-695.
19. N. K. Udayashankar, S. Rajasekaran and **Jagannath Nayak**, "Effect of heat treatment on pitting corrosion resistance of 6061Al/SiC<sub>p</sub> coated by cerium oxide film in 3.5 N NaCl solution", *Journal of Surface Engineering and Applied Electro Chemistry*, **47** (2011) 176-182.
20. Rajasekaran. S, N. K. Udayashankar and **Jagannath Nayak**, "Effect of aging and protective coating on the corrosion behavior of 6061 Al / SiC<sub>p</sub> Composite in Chloride Solutions", *Key Engineering Materials*, **462** (2011) 1397-1403.

21. S. Rajasekaran, N. K. Udayashankar and **Jagannath Nayak**, “The effect of aging and the protective coating on the oxidation behavior of 6061Al/SiC Composite at High Temperatures”, *Key Engineering Materials*, **462** (2011), 30-35.
22. Geetha Mable Pinto, **Jagannath Nayak** and A. Nityananda Shetty, “Adsorption and inhibitor action of 4-(N,N-Dimethylamino) benzaldehyde thiosemicarbazone on 6061 Al/SiC composite and its base alloy in sulfuric acid medium”, *Synthesis and Reactivity in Inorganic, Metal-Organic and Nano-Metal Chemistry*, **41** (2011) 127-140.
23. Geetha Mable Pinto, **Jagannath Nayak** and A. Nityananda Shetty, “Corrosion inhibition of 6061 Al–15 vol. pct. SiC(p) composite and its base alloy in a mixture of sulphuric acid and hydrochloric acid by 4-(N,N-dimethylamino) benzaldehyde Thiosemicarbazone”, *Materials Chemistry and Physics*, **125** (2011) 628-640.
24. T. Poornima, **Jagannath Nayak** and A. Nityananda Shetty, “3,4 Dimethoxy benzaldehyde thiosemicarbazone as corrosion inhibitor for aged 18 Ni 250 grade maraging steel in 0.5 M sulfuric acid”, *J Appl Electrochem*, **41** (2011), 223-233.
25. **J Nayak**, K R Hebbar, “Corrosion Inhibition of T-6 Treated 6061 Al-SiC Composite using Triglycine in Hydrochloric Acid”, *Surface Modification Technologies*, XXIII, Edited by T S Sudershan, U Kamachi Mudali and Baldev Raj.
26. T Poornima, **Nayak Jagannath** and A. Nityananda Shetty, “Studies on corrosion of aged and annealed 18 Ni M250 grade maraging steel in sulphuric medium”, *Portugaliae Electrochimica Acta*, **28** (2010), 173-188.
27. T Poornima, **Jagannath Nayak** and A. Nityananda Shetty, “Corrosion of aged and annealed 18 Ni M250 grade maraging steel in phosphoric acid medium”, *Int. J. Electrochem. Sci.* **5** (2010), 56-71.
28. Geetha Mabel Pinto, **Jagannath Nayak** and A. Nityananda Shetty, “Corrosion Behaviour of 6061Al-15 vol. Pct. SiC Composite and its Base Alloy in a mixture of 1;1 Hydrochloric acid and Sulphuric Acid Medium”, *Int. J. Electrochem. Sci.* **4** (2009), 1452-1468.
29. Geetha Mabel PINTO, **Jagannath Nayak** and A. Nityananda SHETTY, “Corrosion Behaviour of 6061Al-15 vol. Pct. SiC Composite and its Base Alloy in Sulphuric Acid Medium”, *J. Chemistry and Chem. Engg.* ISSN 1934-7375, USA, 3, No. 8 (Aug 2009), 1-11.
30. **J. Nayak**, K. R. Hebbar, “Corrosion inhibition of T-6 treated 6061 Al–SiC(p) composite in hydrochloric acid”, *Trans. Indian. Inst. Met.*, **61** (2008), 221-224.
31. N. K. Udayashankar, S. Rajasekaran, and **Jagannath Nayak**, “Oxidation and corrosion resistance of TiAl<sub>3</sub> Coatings”, *Trans. Indian. Inst. Met.*, **61** (2008), 231.
32. Suma A. Rao, Padmalatha, **J. Nayak** and A. N. Shetty, “Glycyl Glycine as Inhibitor of Corrosion of 6061Al–15Vol.Pct. SiC(p) Composite in Hydrochloric Acid” *Transactions of SAEST*, **41** (2006) 1.

33. *Suma A. Rao, Padmalatha, J. Nayak and A. N. Shetty*, “3-Methyl-4-Amino- 5-Mercapto-1,2,4-Triazole as Inhibitor of Corrosion of 6061 Al–15 Vol. pct. SiC(p) Composite in Hydrochloric Acid” *Journal of Met. & Mater. Sci.*, **47** (2005), 51.
34. *J. Nayak, K R Udupa and K R Hebbar*, “Prediction of Embrittlement during Aging of Nuclear Grade AISI 304 SS TIG Welds”, *Materials Science and Technology*, **21** (2005), 1161.
35. *J. Nayak, K R Udupa and K R Hebbar*, “Estimation of Embrittlement during Aging of Nuclear Grade AISI 316 SS TIG Welds”, *Bull. Mat. Sci.*, **27** (2004), 511.

#### **Papers Presented/Published in Conferences/Seminars: (Recent Five)**

1. *M. G. Ananda Kumar, S. Seetharamu and Jagannath Nayak*, “A Study on Thermal Behavior of Aluminum Cenosphere Powder Metallurgy Composites Sintered in Microwave”, International Conference on Advances in Manufacturing and Materials Engineering (ICAMME-2014), March 27-29, 2014, NITK Surathkal .
2. *M. G. Ananda Kumar, S Seetharamu and Jagannath Nayak*, “Effect of Microwave sintering on the phase, morphology and physical properties of Aluminium- Cenosphere Composite”, International Conference on recent Trends in Advanced Materials (ICRAM-2012), 20-22 February 2012, Vellore Institute of Technology, Vellore.
3. *Lava Kumar, J. Nayak and K. R. Hebbar*, “Yttrium Chloride As Corrosion Inhibitor For 6061Al-15% SiC Composites In Acid Medium”, International Conference on Corrosion in Infrastructure and Chemical Industries, ICICI -2012, Dec 6-8, 2012, ITM Universe, Baroda.
4. *Sheth Sumit J., Jagannath Nayak and H. V. Sudhaker Nayak*, Corrosion Inhibition Studies on Maraging Steel Welds”, International Conference on Corrosion in Infrastructure and Chemical Industries, ICICI -2012, Dec 6-8, 2012, ITM Universe, Baroda.
5. *Sanatkumar, B. S., Nayak, J. and Shetty. A. N.* “The corrosion inhibition of maraging steel under weld aged condition by CPOB (2- (4-chlorophenyl) -2-oxoethyl benzonate) in 1.5 M sulfuric acid medium.” 14<sup>th</sup> National Symposium in Chemistry (NSC -14), 3 - 5 Feb. 2012, National Institute of Interdisciplinary Science and Technology (CSIR-NIIST), Triruvanthapuram, Kerala.

#### **R&D projects**

1. Corrosion Behaviour of 6061 Al-SiC Composites in alkaline Media DRDO, Govt. of India , Rs. 15.75 Lakhs
2. Metallurgical Investigations on Thermally Aged Stainless Steel TIG Welds, BRNS, Govt. of India, 18.81 Lakhs

### **Consultancy Projects**

Consultancy Project on “Low Temperature Embrittlement (LTE) studies on SS304 LN TIG welds”, BARC, DAE, Govt. of India, Mumbai for Rs. 22.00 lakhs.

Routine consultancy work for MCF, Mangalore and Lamina Suspensions, Mangalore

### **Conferences / Workshops / Seminars Organized**

- (i) Organized a National Conference on *Corrosion and Corrosion Control*, METCORR-2005.
- (ii) Organized One Day workshop on *Materials Characterization*, MACMET-2007.
- (iii) Organized International Conference on *Recent Trends in Materials and Characterization*, RETMAC-2010.
- (iv) AICTE sponsored STTP on “Heat Treatment of Ferrous and Non Ferrous Alloys- Theory and Practice”, July 20-25, 2009, NITK Surathkal.

### **Participation in Administrative/Institute Activities:**

(Important Activities during last 5 years)

1. Head of the Department since 21 April 2014
2. Associate Dean (PG & Research) from Sept 2010 to Dec 2013
3. Convener of Board Of Studies (Research) from Sept 2010 to Dec 2013
4. Convener of Board Of Studies (PG) from Sept 2010 to Dec 2013
5. QIP Coordinator from Sept 2010 to Dec 2013
6. Warden of II Block for three years - Sept 2007 to October 2010.
7. Convener of Implementation Committee DASA Admissions -2014.
8. Convener of Implementation Committee DASA Admissions -2013
9. Dy. Center in-charge for Common M.Tech. admissions (CCMT) – 2013
10. Center in-charge for Common M.Tech. admissions (CCMT) – 2012
11. Core committee member for Annual Convocation – 2012
12. Convener for the *Help Centre* during Central Counselling Board (CCB-2011)
13. Coordinator for Common M.Tech. admission (CCMT) – 2011
14. Core committee member for Annual Convocation 2011
15. Member of Senate since Sept 2010
16. Counselling for Common M Tech Admission (CCMT) - 2010
17. Core Committee Member “NITK Golden Jubilee Celebrations” held on Aug 6, 2009 and Aug10, 2009
18. Chairman Food Committee-“ 24<sup>th</sup> Indian Engineering Congress”, 10-13 Dec. 2009
19. Chairman Food Committee-“ 39<sup>th</sup> ISTE Annual Convention”, 17-20 Dec. 2009
20. Chairman Registration Committee-“ Global Alumni Meet”, 26-27 Dec. 2009
21. Chairman Food Committee-“ Annual Convocations - 2008, 2009, 2010

22. Chairman Food Committee- International Conference on “Frontiers in Mechanical Engineering” held at NITK during 20-22, May 2010
23. AIEEE Counselling for the years 2008, 2009 and 2010
24. Organizing GATE, JEE, JMAT during 2009, 2010, 2011, 2012 and 2013
25. Member Sports Advisory Committee
26. Member Security Committee
27. Involvement in Inter-NIT tournaments for students
28. Core committee member for conducting Written Test for selection of Graduate Engineer Trainees of KIOCL.
29. RPAC member for Research Scholars in Civil, Applied Mechanics and Mechanical Engineering Departments