

Faculty Web Page
(As on 19 April. 2010)

Name: Dr. S. K. NATH Designation: Professor Department/Centre: Met. & Mat. Engg. I.I.T. Roorkee				Date of Birth: 30-05-1955
Date of joining the Institute(DD/MM/YY):				
Lecturer	Reader/Asstt. Professor	Assoc. Professor	Professor	Head of Department
16.04.1981	Reader: 17.11.1994	30.04.1998	11.05.2006 till date	1-1-2007 to 31-12-2009

Educational qualifications

Degree	Name of Degree	Subject	Institution	Year
Bachelor	B. E.	Metallurgy	University of Roorkee	1977
Masters	M. Tech	Metallurgy	I.I.T. Kanpur	1977
Doctoral	Ph.D.	Physical metallurgy	University of Roorkee	1990

Experience Teaching Experience Under Graduate and Post Graduate: 29 years Research Experience: 29 years	Projects/Dissertation guidance: B.E/B. Tech : 50 M. Tech.: 29 Doctoral (Ph.D.): 04 In progress: 04
Sponsored research projects Completed: 05 Nos. Amount: Rs. 51 lakhs Consultancy projects: Completed: 10 Nos. Amount: 50 lakhs	Publications Referred Journals: 34 Conferences: 47 Book edited: 1. Advances in Materials and Processing, Proc., National Seminar, Nov. 9-10, 2001, Deptt. of Metallurgical and Materials Engg., I.I.T. Roorkee, Roorkee, Edited by S. Ray, S.Singh and S.K. Nath, R.K. Printers and Publishers, Roorkee. 2. Nanomaterials and Devices- Processing and Applications, edited by S. Ray, S.K. Nath, A. Kumar, R.C. Agarwala, V. Agarwala, G.P. Chaudhari, B.S.S. Daniel, 2009 Trans Tech Publications Limited, Switzerland.

Courses Revised/Developed:

1. Revised the syllabus of B. Tech II, III and IV year
2. MT-516 Principle of materials selection
3. MT-528 Tribology of materials

Some Recent publications:

1. Rajnesh Tyagi, **S.K. Nath**, S. Ray, "Dry sliding friction and wear in plain carbon dual phase steel", Metallurgical and Materials Transactions, Vol. 32A, Feb. 2001, pp. 359-367.
2. Rajnesh Tyagi, **S.K. Nath**, S. Ray, "Effect of martensite content on friction and oxidative wear behavior of 0.42 pct carbon dual phase steel", Metallurgical and Materials Transactions, A, Vol. 33A, 2002, pp. 1-10.
3. Rajnesh Tyagi, **S.K. Nath** and S. Ray, "Oxidative wear in multi-phase materials", Metals Materials and Processes, Meshap Science, April-June, Vol. 14, No. 2, 2002, pp. 103-114.
4. **S.K. Nath**, S. Ray and M.L. Kapoor, "A Single – Particle Model for theoretical estimation of tensile strength of two-phase metals", Metals Materials and Processes, Meshap Science, 2002, Vol. 14, No. 3, pp. 241-254.
5. A.K. Saran and **S.K. Nath**, 'Effect of Strain rate on the yield point phenomenon of sheet steel', Metals, Materials and Processes, Meshap Science, 2002, Vol. 14, No. 2 pp. 207-218.
6. Rajnesh Tyagi, **S.K. Nath** and S. Ray, "Modelling of dry sliding oxidation-modified wear in two phase materials", **WEAR**, 255 (2003) 327-332.
7. Rajnesh Tyagi, **S.K. Nath** and S. Ray, 'Friction and Wear behaviour of medium carbon dual phase steel under dry sliding' , Indian Journal of Tribology, 2003.
8. **S.K. Nath**, S. Ray and M.L. Kapoor, 'Effect of intercritical heat treatment on the plastic – strain ratio (R-value) of the plain carbon dual-phase steel', Metals, Materials and processes, Meshap Science, vol.14, issue-4, Oct.-Dec. 2003, pp. 267-276.
9. Rajnesh Tyagi, **S.K. Nath** and S. Ray, "Development of wear resistant medium carbon dual phase steels and their mechanical properties", Materials Science and Technology, London, vol.20, April 2004, pp.1-8.
10. Ashish Jaiswal and **S. K. Nath**, "Effect of intercritical heat treatment paths on the microstructures and mechanical properties of plain carbon dual-phase steels" Metals, Materials and processes, Science, vol.18, No.2, 2006, pp.179-190.
11. **S. K. Nath** and Uttam kr Das, "Effect of microstructure and notches on the fracture toughness of medium carbon steel", J of Naval Architecture and Marine Engineering, June, 2006, pp. 15-22.
12. M.K. Manoj, R. K. Galgali, **S. K. Nath** and S. Ray, "Synthesis, Characterization and Effect of Microstructure on Slurry Resistance of Cast Fe-TiC Composites", J of Naval Architecture and Marine Engineering, June, 2008, pp. 19-26.
13. Satyesh Kr Yadav, Satya Vyas, Ramesh Chandra, G. P. Chaudhary, and **S. K. Nath**, "Study of electrical and electrical properties of Zr-doped ZnO thin films prepared by dc reactive magnetron sputtering", Advanced Materials Research Vol. 67 (2009) pp.161-166.
14. G.P. Chaudhari, A.K. Padap, S. Behera, **S.K. Nath**, "Processing, microstructure, and corrosion behaviour of multi-axially forged low carbon steels", Corrosion Engineering Science and Technology (accepted on 20/06/2009).
15. **S. K. Nath**, S. N. Pandya, G. P. Chaudhari, "Friction and Wear Characteristics of TIG Processed Surface Modified Grey Cast Iron", Journal of Scientific Research, 2009.

16. Sandeep Bansal , **S. K. Nath** , P. K. Ghosh, S. Ray, “Stretched zone width and blunting line equation for determination of initiation fracture toughness in low carbon highly ductile steels” Int. J Fract, DOI 10.1007/s10704-009-9381-0.
17. Sandeep Bansal, **S. K. Nath**, P. K. Ghosh and S. Ray, Influence of Geometrical Variables on Initiation Fracture Toughness (JIC) of Low Carbon High Manganese SA 333 Gr. 6 Steel, ISIJ International, Vol. 49 (2009), No. 8, pp. 1253–1258
18. A.K. Padap, G.P. Chaudhari, **S.K. Nath**, V. Pancholi (2009) “*Ultrafine-grained steel fabricated using warm multiaxial forging: microstructure and mechanical properties*”, Materials Science and Engineering A, v 527, n 1-2, p 110
19. A.K. Padap, G.P. Chaudhari, **S.K. Nath**, V. Pancholi (2010) “*Warm Multiaxial Forging of AISI 1016 Steel*”, Materials and Design, doi:10.1016/j.matdes.2010.03.030
20. A.K. Padap, G.P. Chaudhari, **S.K. Nath** (2010) “*Mechanical and dry sliding wear behavior of ultrafine-grained AISI 1024 steel processed using multi axial forging*”, accepted in Journal of Materials Science (Springer) DOI: 10.1007/s10853-010-4430-7

Honours and Awards:

1. Visited Universite de Paris Sud, Orsay, France in 2004 under I.N.S.A. exchange of scientist programme

Memberships of societies:

1. Life member of Institution of Engineers, India.

Member of Board of Governor:

1. Mahadevi Institute of Technology, Dehradun.

National/International Collaboration:

1. Development of erosion resistant steel for hydro turbine with N. M. L. Jamshedpur.

Current Research Interests:

1. Development of materials for tribological applications.
2. Physical simulation on steels using Thermo mechanical Simulator Gleeble 3800.
