



**DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING  
NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL**

***P. O. Srinivasnagar – 575 025, Dakshina Kannada District***

***Karnataka State, India***

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The Department of Metallurgical and Materials Engineering, NITK has been actively involved in Industrial Technical Consultancy and Testing Services that are extended predominantly to local industries and academic institutions. The following list provides the domains of expertise of the department.

1. Failure and Root-Cause Analysis of industrial structures and engineering components.
2. Materials Selection and Materials of Construction (MOC) Analysis.
3. Mechanical Testing and Materials Characterization involving Hardness, Tensile, Impact, Indentation Creep Tests, Tribological testing and analysis.
4. Corrosion Testing and Analysis for industrial and structural components.
5. Design and Analysis of Heat Treatments for structural steels, light metals, and commercial alloys including: Age hardening, plain hardening, tempering, austempering, carburizing, sub-zero and cryogenic treatments.
6. Analysis of severity of quenching, Nano-quenchant Development and related investigations.
7. Wettability/contact angle studies of various fluids on various solid surfaces.
8. FEM based numerical/computation work including Stress Analysis, CFD, Solidification Studies, Heat Transfer.
9. Microstructural Analysis and Characterization involving light, scanning and Transmission Electron microscopy, X-Ray Diffraction Studies, FTIR spectroscopy, Particle size analysis, Differential Scanning Calorimetry.
10. Designing, Processing and testing of plastics, rubbers, polymer blends and composites.
11. Synthesis and Characterization of Nano-Materials.
12. Powder Compaction and Sintering/pressure consolidation of alloys and composites.
13. Designing, Testing, and Characterization of industrial weldments.
14. Dip-coating, Electroplating, Surface Treatment, and Surface modification of experimental/industrial alloys.
15. Stereoscopy, Fractography, Fracture Signature Identification and related analysis for industrial alloys and composites.
16. Inclusion and Grain-size Analysis of industrial components as per ASTM standards.
17. Thermo-mechanical processing, Foundry & Metal Casting related investigations, plant layout design & renovation.
18. Analysis and Evaluation of Industrial Furnaces, Refractories and Thermocouples.
19. Shear bond testing of solder joints and characterization of Pb free solder.
20. Measurement of thermal conducting and viscosity.
21. Measurement of Coating Thickness.



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**Testing/Consultancy charges per sample/element/piece**

Sl. No.	Name of the Analysis	Price per specimen ( ` )
1	Thickness of Zinc coating	1,000.00
2	Mass of Zinc coating	1,000.00
3	Tensile testing	2,000.00
4	Weld Test	1,000.00
5	Flexural testing	1,000.00
6	Wear Test	2,000.00
7	High Energy Rate Ball Milling	1,000.00
8	Particle Size Analysis	500.00
9	Micro analysis of weld test	2,000.00
10	Grain size measurement	2,000.00
11	Corrosion Test	1,000.00
12	Impact Testing	1,000.00
13	Heat Treatment	1,000.00 (Depending on time duration)
14	Metallography	1,000.00
15	Microstructure	1,000.00
16	Compression test	1,000.00
17	Microhardness (3 indentation)	500.00 (Academic) 750.00 (Non Academic)
18	Contact Angle Measurement (3 readings)	500.00 (Academic) 750.00 (Non Academic)
19	FTIR	ATR: Academic - 500.00 Non Academic – 1,000.00 KBr mode: Academic – 1,000.00 Non Academic – 2,000.00
20	SEM	Academic: Sputtering – 200.00 SEM – 500.00 Non Academic: Sputtering – 500.00 SEM – 1,000.00
21	XRD Analysis	Academic – 500.00 Non Academic – 1,000.00

**Corrosion testing**

Granular Corrosion test as per ASTM A-262	
Practice A	500.00 per sample



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Practice B / Practice F / IGC as per ASTM G 28	2,800/-
Practice C	4,000/-
Practice C	6,000/-
Practice E	1,300/-
Practice E	2,000/-
ELECTROCHEMICAL POTENTIO-KINETIC REACTIVATION (EPR) TEST TECHNIQUE	3000
Pitting Corrosion	3000
Electrochemical impedance spectroscopy	3000

- Note: 1. Machining and cutting charges extra  
2. Heavy component handling charges extra  
3. Consultancy charges are dependent on factors like the field of work, extent of knowledge  
4. The above charges likely to change depending on specimen condition & duration of testing.



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**List of potential customers/users:**

<b>Sl. No.</b>	<b>Name of the Company/Institute</b>
1	Mangalore Refinery Petrochemical Limited, Mangalore
2	Mangalore Chemicals & Fertilizers, Mangalore
3	Konkan Railway Corporation Limited
4	ABB Ltd., Bangalore
5	CPWD, NITK
6	SKF Boilers & Driers, Moodabidri
7	Lamina Foundries, Nitte
8	ProSim, Bangalore
9	Port & Fisheries Division, Udupi
10	Airtech Pvt. Ltd., Dharwad
11	BASF, Mangalore
12	RITES Limited, Periy, Kasargod
13	MIT, Manipal
14	Deccan Plast Industries, Mangalore
15	Yenepoya University, Mangalore
16	MITE, Moodabidri
17	Manipal Medical, Dental and Pharmacy Colleges, Manipal
18	GWASF, Baikampady
19	NITTE Foundry
20	UPCL, Padubidri
21	Suzlon Energy Ltd., Padubidri
22	NMPT, Panambur