Industry Outlook

NON-DESTRUCTIVE TESTING SERVICES

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PARESH HARIBHAKTI,
MANAGING DIRECTOR

TCR ADVANCED ENGINEERING

HELPING BUSINESSES CONDUCT SCIENTIFICALLY REASON-BASED NDT

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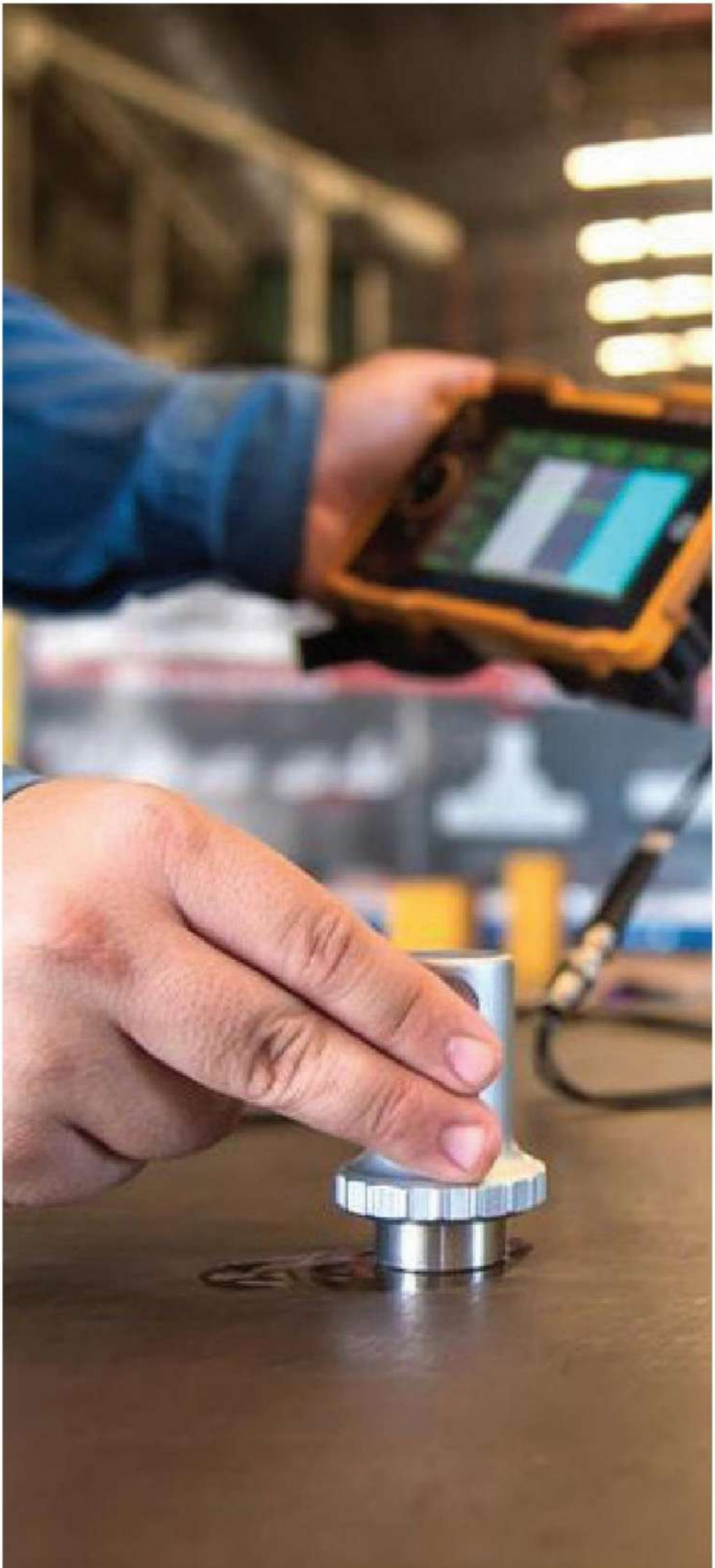

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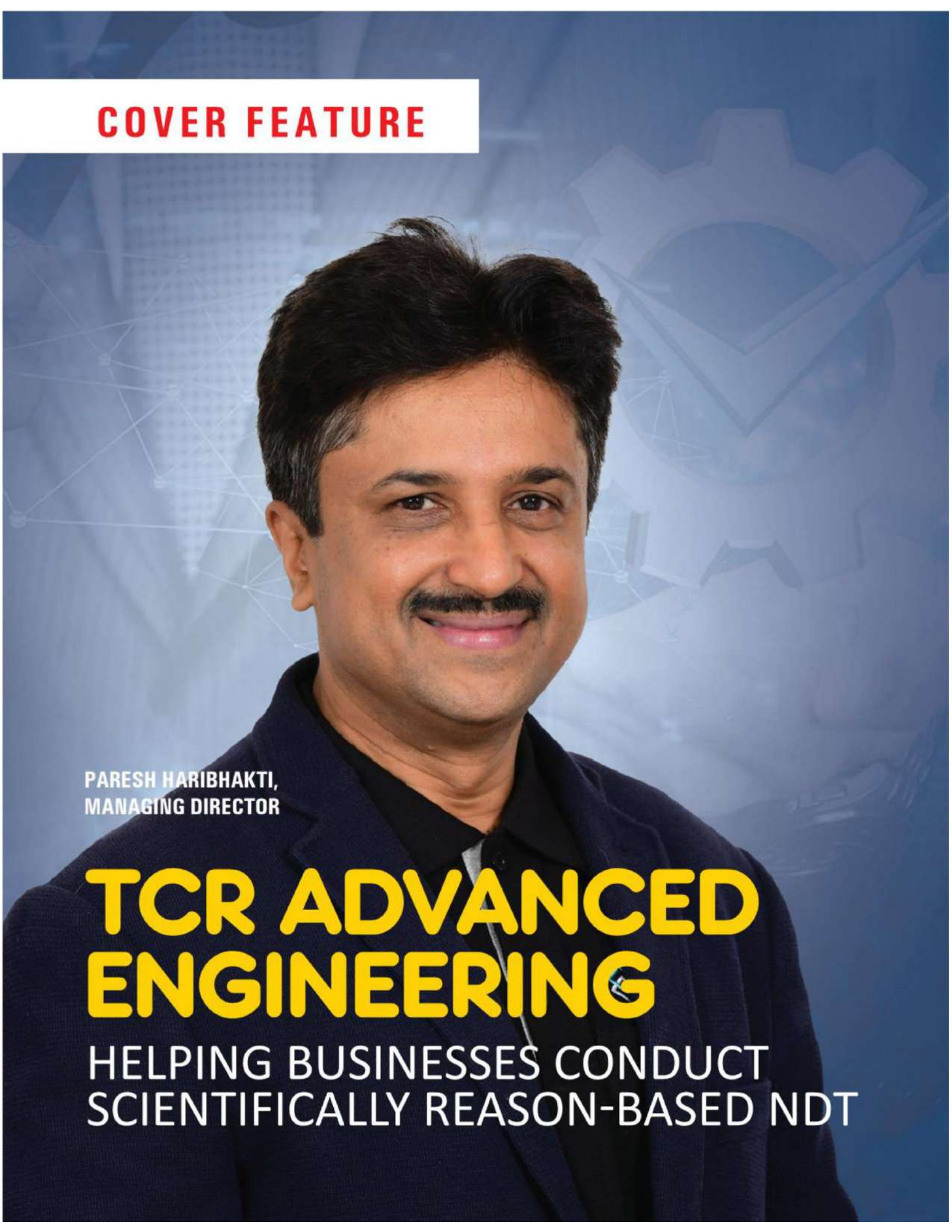

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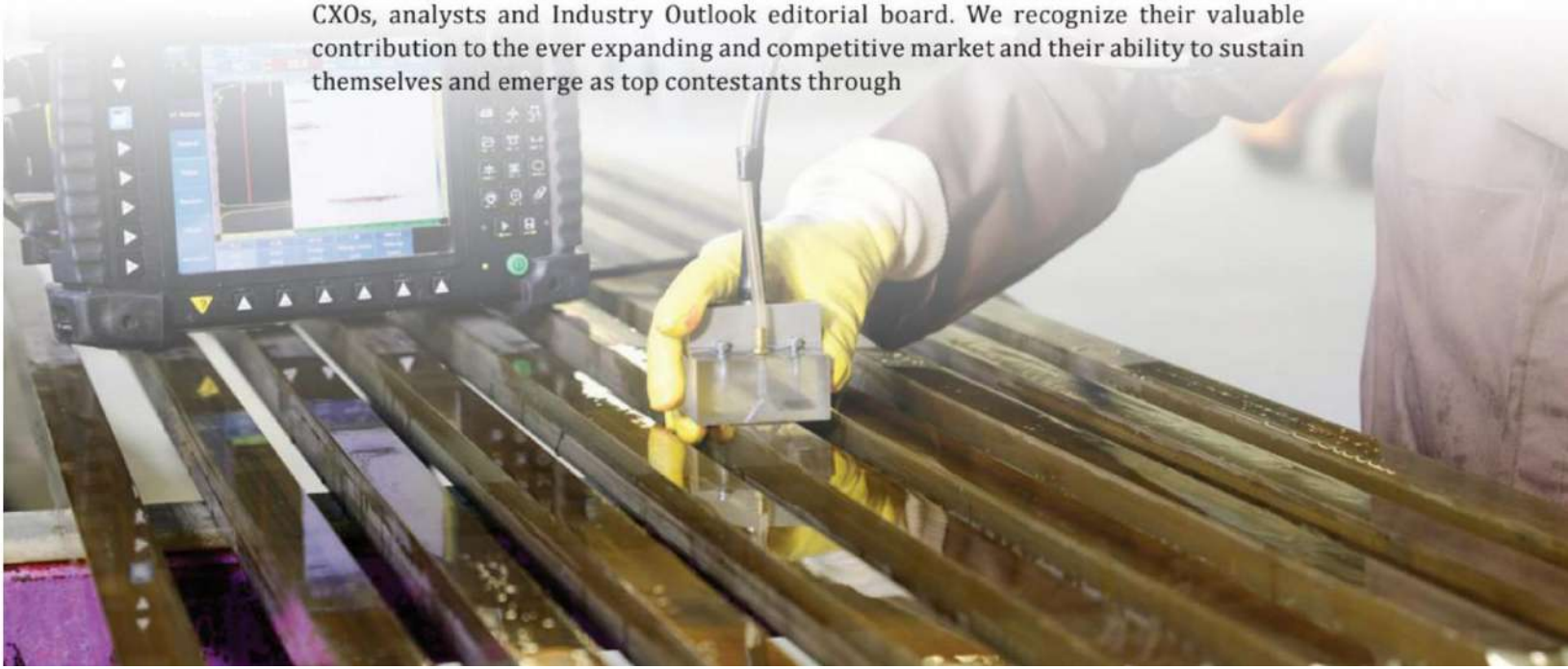
Industry Outlook TOP 10

NON-DESTRUCTIVE TESTING SERVICES PROVIDERS - 2021

According to the Non-Destructive Testing (NDT) and Inspection Global Market Report - 2021, the NDTs market is expected to reach $11.16 billion in 2025. The market was valued at $2,058.7 million in 2020, and it is projected to be worth $3,042.3 million by 2026, registering a compound annual growth rate (CAGR) of 7.23 percent during the forecast period of 2021 - 2026. The need for maintenance & optimization for efficient operations and quality or safety assurance is resulting in the worldwide adoption of NDT testing equipment. Safety, increased service intervals, reducing tolerance to disruption, small emission targets, and innovative materials are boosting the demand for NDT techniques in the aerospace and defense sectors. The power generation plants are widely using NDT equipment to ensure the safety, integrity, and reliability of plant equipment such as pressure vessels, boilers, heat exchangers, pipework, and pipelines. The NDT market is dominated by fossil fuel applications. The aging constructions in the country are also driving the market. With the increased demand from power, defense and aviation sectors, the market is expected to boom in India in the coming years.

With the adoption of digital imaging technology, NDT equipment have become cost-effective. The method being highly costly is one reason hindering the market growth of this testing method. Continuous data collection, storage, online inspection, advanced simulation of data in real-time, and interpretation of the information are also possible with new NDT equipment techniques. The latest technology NDT also speeds-up manufacturing process. The stringent safety measures by various governments around the world in manufacturing are also helping to enhance the market growth. Due to the increasing spending on infrastructure, the APAC region is witnessing highest growth in the NDT market. The Indian NDT equipment market ranks the fourth largest market in the Asia-Pacific region.

Industry Outlook in this issue presents a list of 'Top 10 Non-Destructive Testing Service Providers – 2021' who have leveraged their extensive industry expertise and experience in bringing innovative solutions to the market. The following list has been prepared after being closely scrutinized by a distinguished panel of judges including CXOs, analysts and Industry Outlook editorial board. We recognize their valuable contribution to the ever expanding and competitive market and their ability to sustain themselves and emerge as top contestants through



BY MARY JANIFHA EVANGELINE

Non Destructive Testing (NDT) is utilized for characterization, detection, and estimation of the size of the inherent as well as service-induced discontinuitiesfor in-service monitoring of the plant assets. It is also utilized during failure investigation for arriving at thespecific damage mechanism(s) and in ascertaining the root cause of failure. This is an indispensable inspection technique when performing Asset Integrity Management study in all process industrial verticals ranging from manufacturing, automobiles, oil and gas, refining, power industry, etc.

TCR Advanced Engineering Pvt. Ltd. (Gujarat, India) is a NABL accredited laboratory with over 3000 clients globally and has successfully conducted over 7,500 NDT projects and 6,000 failure investigations.

NON - DESTRUCTIVE TESTING BY TCR ADVANCED ENGINEERING

TCR Advanced provides a wide range of Non-Destructive Testing (NDT) services like In-Situ Metallography, High-Temperature Hydrogen Attack (HTHA), Time of Flight Diffraction (TOFD)& Phased Array Ultrasonic Testing (PAUT), Videoscopy, Automated Reformer Tube Inspection Service (ARTiS), Helium leak testing, and Thermography. The list goes on to include Positive Material Identification (PMI), Heat exchanger tube inspection using {Eddy current testing (ECT)/Remote field eddy current testing (RFET)/ Internal rotary inspection system (IRIS)/ Near field testing (NFT)/ Magnetic flux leakage (MFL)}, Ultrasonic Testing (UT), Dye Penetrant Testing (DPT), Magnetic Particle Testing (MPT) using Coil & Yoke Method, Demagnetization and Crack depth measurement using the electro-magnetic technique.

Few other quintessential NDT services that TCR Advanced provides include Permeability measurement, Ferrite measurement, Portable hardnesstest (Ultrasonic contact impedance/Re-bounce), Failure investigation based on NDT approach, Residual Life Assessment (RLA) of Boilers and pressure vessels, Fitness for Service (FFS), Condition Assessment (CNA), and Training and Certification as per ASNT Level-I & II.

"Our team of engineers and technicians has gained rich experience from the vast majority of investigations of failed components and has provided expertisein developing NDT as a diagnostic tool with confidence," says Paresh Haribhakti, MD, TCR Advanced Engineering.

Constant skill enhancement of its team members has given TCR Advanced an edge over its competitors in the Global Landscape. The company has developed automated crawlers for reformer tube inspection (ARTiS) that is widely accepted in Indian refining and fertilizer industries.

SINCE THE GENESIS OF TCR ADVANCED ENGINEERING

The mother entity, TCR Engineering Services was incorporated in 1973 and has over the years grown to be India's leading material testing and research center. TCR Advanced, located in Vadodara, is a service partner of TCR Engineering Services, Mumbai, was established in 1999 to provide credible solutions that ensured uninterrupted operation of assets, improved productivity, and enhanced safety in compliance with all environmental standards.

> **TCR ADVANCED AIMS TO BE THE BEST AT ALL THAT THEY DO -- THE GOAL IS TO MAKE A POSITIVE DIFFERENCE, HELP CLIENTS OVERCOME THEIR CHALLENGES, AND MAXIMIZE THEIR SUCCESS.**

The company is an industry leader and has worked on some very critical problems for organizations all over the world. TCR Advanced has over 500 years of cumulative metallurgical and advisory experience that it has gathered from unique and challenging assignments. Today, TCR Advanced has become one of the few testing laboratories in India where third party witness is done by various MNCs, public and private limited companies such as Bharat Heavy Electrical Ltd.(BHEL), Nuclear Power Corporation of India Ltd. (NPCIL), Larsen & Toubro Ltd. (L&T), Engineers India Ltd. (EIL), Toyo Engineering India Ltd., Oil & Natural Gas Commission (ONGC), to name a few.

"The aim at TCR is to makepersistent efforts in ensuring a positive difference by helping clients overcome their problemsand maximize their productivity," concludes Paresh.

TOP 10 NON-DESTRUCTIVE TESTING SERVICES PROVIDERS 2021

COMPANY	MANAGEMENT	DESCRIPTION
Arora Technologies Navi Mumbai arorandt.com	Mukesh Arora, Founder	A topnotch quality manufacturer & distributor of innovative, excellent design and technology NDT products & accessories
Exraytech Group Ahmedabad exraytechgroup.com	V. M Kumar, MD Abhishek Kumar, Director	Offers world-class Nondestructive testings, Material testings, Third party inspection, Consulting services in NDT & Welding Inspection sectors
Industrial Inspection Services Mumbai industrial-inspection.in	Rajesh Gandhi, Promoter & MD	Renowned for offering industrial heat treatment procedures & services including pre-heating, post-heating, stress relieving, intermediate stress relieving, normalizing, solution annealing, water quenching, tempering, step cooling & drying of refractory material
Mayuresh Engineers and Fabricators Pune mayureshengineers.co.in	Mayuresh, CEO	Providing excellent products including Metal Crack Detection Machine, Magnetic Particle Inspection Machine, MPI Yoke type Machine & Track and Carriage type Demagnetizers
Sai Heatreaters & Non-Destructive Testing Navi Mumbai saindt.com	Ks Nair, CEO	An experienced provider of Non-Destructive Testing and Post Weld Heat Treatment with a team of qualified & trained engineers & technicians
TCR Advanced Engineering Vadodara tcradvanced.com	Paresh Haribhakti, MD	TCR's scientific approach along with its team of metallurgists & mechanical engineers led by qualified NDT level III experts, has helped the industry achieve desired results through NDT
Testex Mumbai testex.in"	Shankar Ramchandran, Owner	A nondestructive testing (NDT), inspections, research & development, program development & management services provider for Refining, Chemical, PetroChemical, Pharmaceutical, Thermal Power Plant, Automotive, Marine, Infrastructure & Food Processing sectors
Trinity NDT Bengaluru trinityndt.com	Ravi Kumar. T, Co Founder	A provider of excellent NDT Training & Certification Courses, Nondestructive testing - NDT Services, Welding Inspection & ASNT NDT Level III Consulting services
Universal NDT Services Ankleshwar universalndt.in	Devendra Mehta, Owner & Founder Vivek Mehta, Co-Owner	A leading service provider in Non-Destructive Testing such as RT, UT, MPT, DPT/LPT, VT, Thickness Measurement, Hardness Test, PMI using XRF, and other NDT services as per client request
VectorNDT Bengaluru vectorndt.in	Hari Prasad Varda, Director	Offering a range of NDT products in Magnetic Particle Inspection & Liquid Penetrant Inspection Techniques manufactured by a world-class team