



# 2-Day Training Course On Vacuum Heat Treatment

22-23 February, 2022



Jointly Organized By  
CoE National Institute of Vacuum Science and Technology (NIN VAST)  
&  
Karachi Tools Dies & Moulds Centre

## OUTLINE

- Comparison of Vacuum and Atmospheric Furnace Processes
- Types of Vacuum Furnaces
- Pumping Systems
- Operation of a Vacuum Furnace
- What is product design cycle?
- Pumping Systems used in KTDMC furnaces
- Material placement techniques and precautions inside the furnace
- Best practices for quenching
- Understanding Different types of Tooling with focus on Casting
- Controlling material properties through surface engineering
- Common Tool Steels used in Pakistan
- Who are the international players of Tool Steel How KTDMC chooses tool steel for different applications
- Interesting facts about Heat Treatment of Dies and Moulds
- How to increase life of mould through Heat Treatment
- Why vacuum hardening
- How to make recipe for Heat Treatment Effect on mechanical properties due to variation in thickness
- Evaluating Heat Treatment results
- Common Heat Treatment defects
- Case Studies of Different Industries

## Course Fee

Course Fee includes training material, lunch, refreshments etc.

- For General Participants: Rs. 25,000/-
- For Students: Rs. 10,000/-



## LEARNING OUTCOMES

- Commercial and practical aspects of Heat Treatment
- Working of Heat Treatment Furnaces
- Troubleshooting of Furnaces
- Proper selection of material for tooling

## WHO SHOULD ATTEND?

- Material engineers, metallurgists, product designers, automotive vendors, researchers, scientists, technologists, system designers, process managers, plant operators, equipment suppliers, Ph.D. and M.Phil. students, diploma holders, B-tech engineers, technicians, faculty members of universities and owners/executives of high-tech industries

## PRE-REQUISITE

- Knowledge / experience of vacuum heat treatment

## Venue

- National Institute of Vacuum Science & Technology, NCP Complex, Islamabad

## RESOURCE PERSON

### ZAHEER AHMED

- A Metallurgical and Material Engineer having more than 15 years of practical experience in Vacuum Heat Treatment and Nitriding along with handling the projects of major Automobile OEMs and Vendor Industry, countrywide.

## CONTACT PERSON

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### For further information

Please Contact:

#### Scientific Information Branch

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