

Er. Udayan Pathak FIE, FASM



Details of Professional Career and achievements

Educational Background:

B. E (Metallurgy) from Visvesvaraya Regional College of Engineering (Now VNIT), Nagpur, in 1986.

Prior to BE, **Diploma in Metallurgy** from Govt. Polytechnic Nagpur.

Fellow, Institution of Engineers (India)

Fellow, American Society of Materials

Professional Career: Over 35 Years.

Currently working as Independent **Management, Technical Consultant & Master Trainer** in the areas – Steel, Forgings, Castings, Heat Treatment, Surface Modifications, Coatings, GD&T, CQI Series, FMEAs, Automotive Systems, WCQ & E-WCQ, Vendor Assessments & Upgradation, VAVE, POSH.

Opted for VRS from Engineering Research Center of Tata Motors, as Head World Class Quality. Engineering World Class Quality is first of such attempt in Global Automotive Industry.

He was Assistant General Manager – Materials Engineering. Working on non-conventional Materials & Concepts, like Thermo Electric Materials & Devices, Light Weighting, PV Materials, Computational Metallurgy, Center of Excellence for Tribology, Steel, Castings & Forgings and Functional Fluids since May 2008.

Started Career as G E T in Ruston Hornsby (India) Limited (now Greaves Limited).

Prior to Tata Motors, worked as

- Chief Manager, Materials Engineering, **John Deere Equipment Private Limited, Pune**. Dec 2000 to May 2008
- Manager – Quality Assurance, **Automotive Castings Group DGP Hinoday (Now Mahindra CIE)**. March 1999 – Dec 2000
- Assistant Manager (Corporate Metallurgy & Axle Quality), **Spicer India Limited, Chakan, Pune**. Aug 1996 to March 1999.
- Assistant Manager (Manufacturing), **Bharat Forge Limited Mundhwa Pune**

International Travel :

- Travelled extensively to USA, UK, Germany & Norway for Paper presentations and New Technology Evaluation.

Professional Associations:

- Research Council member CSIR – AMPRI, Bhopal.
- Industry Expert Member, Performance Appraisal Board, CSIR-CMERI, Durgapur.
- Immediate Past Chairman (2019-23) and Past Secretary (2206-11), **ASM (American Society of Materials) International, Pune Chapter**. He made Pune Chapter most Vibrant & Dynamic Chapter.
- He is Past Executive Committee Member of Institution of Engineers (India) Pune Local Centre.
- Peer Reviewer for SAE, SIAT, ASM & IIF publications.
- Consortium member on “**Vision Document & Road Map for Light Materials usage for Automotive Applications**” – initiative of **AMPRI & CSIR**.
- Member Indo – Norway & Indo – Australian Light Weighting Consortium.
- Fellow Institution of Engineers (I).
- Fellow ASM (2018)
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Social Affiliations:

- Chairman, Jnanada Pratishthan, running school offering high quality education for Students from Socially & Economically under-privileged class.
- Invited Executive Committee Member, Sampoorna Bamboo Kendra (NGO), Melghat. Working for upscaling of Skills of Tribals in traditional art forms, to prevent Urban Migration and Exploitation as unskilled workers.
- Member, Seva Arogya Foundation (NGO) offering affordable, high quality Primary Medical Health Care to people, specifically women staying in Slum areas of Pune city.

Patents, Publications & Presentations:

Holding **18 International & National Patents** – in the areas High Strength–High Ductility Materials, Hollow Automotive Designs, Engineering World Class Quality etc. International & National Publications – 75+ in the field of Induction Hardening, Gas Nitriding, Environment, Quality Systems, Intensive Quenching, Technical Education. Best Paper

Technical Education: Visiting Faculty COEP, RIT, SIET & AICTE staff refresher course. Indo – US initiative for improving Technical Education.

Partial List of Major Technology Achievements:

1. Developed efficient Fillet (Induction) Hardening Technology for high performance crank shafts.
2. Development of Induction Hardening of Micro-alloyed steel crankshaft.
3. Establishing Titanium forging process for Indian space program.
4. Establishing Polymer Quenching Technology for forging heat treatment and induction hardening.
5. Development of resulphurised steel grades for Induction Hardening applications:
6. Development of retort type Case Carburising furnace for UJ Cross cups.
7. Development of Turbocharger housing casting first time right, first time in the world.
8. Development of superior Machinability SG Iron castings by optimizing nodule count in the casting.
9. Development of Induction Hardening of 400/12 grade SG Iron.
10. Development of Gas Nitriding using Fluidized bed furnace reducing cycle time by 50%..
11. Development of SAE 4820 grade steel first time in India.
12. Development of validation process for ‘Heat Treatment simulation software’.
13. Development of business model ‘Low cost forging from SME forging units’.
14. Development of hollow transmission parts through seamless tubing.
15. Substitution of high cost Cr Mo Steels by low cost Cr steel by property optimization.
16. Development of Ferritic Nitro-carburized sheet metal parts for replacing forging.
17. Development of Hollow Parts.
- 18.** Development of forgings from New Generation Micro-alloyed Steels.

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