Nitin Kumar

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Summary

- Result-oriented professional with 14 years of experience in Engine Calibration programs with expertise in EMS calibration for EFI Gasoline, Natural Gas engines and Hybrid BEVs.
- Currently working with Tenneco Controlled Powertrain (FMCP) Germany, as BEV Development Lead, for AMG race engines development in S Class, E Class vehicles targeting the European and US markets. Managing their BSG hardware development, calibration, integration and analysis of issues with field returns.
- Received appreciation for the completion of projects at Suzuki targeting the development of a 35% thermally efficient, RDE-compliant SI engine, automation of engine calibrations to achieve rapid ECU calibration, Port Flow Benchmarking of competitor engines (Tata Tiago, KWID, Ford Eco Sport) and thermodynamic developments.
- Created the continual improvement of calibration guides and process flows for standardization of calibration.
- Successfully led teams to contribute towards the development of improved processes and meet delivery deadlines.

Professional Experience

Tenneco Powertrain (Federal-Mogul GmbH), Burscheid, Germany **June'22 to date**

Technical lead: Calibration and Product (BSG) Integration in Vehicles/Rigs
Customer: AMG, Mercedes, Daimler

- Leading PV/DV Analysis | Calibration and integration activities on AMG vehicles (S-Class, E-Class and G-Class)
- Led weekly Management-level Steering committee meetings with stakeholders internally and externally.
- Led strategy development team in implementing problem-solving methodologies (Fishbone, 5 WHY, 8D) resulting in a 25% increase in overall process efficiency.
- Data analysis for tests on rigs/vehicles on the test field using strong analytical skills.
- E Motor Stator Potting porosity assessment cycle time reduced by 60% by process change and upgradation.
- Leading E-Motor design improvement workshops with clients for better products in upcoming vehicles.
- Led cost optimisation by VA/VE approach sessions for a joint team of Cost and Development Managers.

Technical Project Manager for Mechatronics Development and NVH related Scrap reduction in E-motors:
- ECR and ECN releases on Windchill, NVH improvement in 16^{th} Order, 24rth Order and 48^{th} Order.

Tools used: JIRA, MS Project, ENOVIA, AVL Creta, Smart Sheet, Excel/Office programs for Project Management.
Data Analysis Tools: Vector CANoe, CANape, INCA, PUMA, Concerto, MONACO, DTS9, ODX, V Flash, J Tag reflash.

Maruti Suzuki India Ltd. (MSIL), Gurugram **Aug'09 to June22**

Team Manager: Gasoline PFI/TC DFI Engine Combustion Development and Calibration, India & Japan Market

Leading product development including requirement analysis, finalization of specifications, design optimisation, prototype development and testing of engine control systems.
Managing capital procurements to the tune of 10 million
Managing a team of 13 engineers, Calibration data release planning for DP, PP, Pilot, SOP and COP
Direct reporting to the GM of the vertical for Assignments related to new engine development for the future.

- Performing engine level and vehicle level calibration/dataset optimization on the desk and on rigs
- Administering engine hardware development and automation of EMS calibration; acquiring type approval (homologation) for Indian & Global products by various homologation agencies
- Team player, development for Calibration sense, Calibration data Quality gate DR

Achievements

- Tuned 1 L & 1.2 L gasoline PFI engines with necessary hardware changes for meeting FE target requirements.
- Calibrated 2 dual VVT LPCEGR engines in Gasoline and CNG mode - improved FE by 2%

- Worked with engines to qualify for Euro6 regulation by tuning engines of low THC and early CATA light off
- Reduced pumping loss of engines by improvement in phasors, and port flow & achieving FE up by 12% (800 cc)
- Implemented 1st-time competitor engine firing in-house for engine benchmarking; saved 51,082 USD
- Developed an in-house engine cooling system for test beds thereby saving 20,000 USD
- Reduced base calibration timelines (~ 20%) with the introduction of auto-calibration via CAMEO.
- Calibrated 1000 CC CNG Engine at SMC, Hamamatsu, Japan for international markets and Developed 1st indigenous engine in-house in 2014.

Achievement Awards

- 2016 for CAMEO study & implementation for test bed efficiency improvement
- 2012 for Gasoline/CNG Model calibration & installation of ISAC for vehicle simulation.
- 2011 for SOPS and complete function development in India right from the conceptualization till the launch
- Awarded for developing local vendors for direct mounting cylinder head instrumentation by attaining a cost saving of 2500 USD$

Education

2009: B.E. (Production Engineering) from Birla Institute of Technology, Mesra with a 7.67 GPA

Competencies

- EV motor data analysis and Calibration for racing cars start HV vehicle isolation and LGVI detection.
- Engine Base Calibration - Air Path Calibration, Fuel Path Calibration, Knock Sensor Calibration, Ignition Timing Calibration, Target Lambda Settings, Exhaust & Torque Model Calibration, Min Ignition and Air charge Calibration, Sensor Fail Safe Calibration, Emission Calibration on Bench Dynamometer, Catalytic converter Purification rate measurement for PGM optimisation.
- Bosch and Denso EMS calibration for EFI Gasoline and Natural Gas engines / Catalytic Converter Development
- Expertise with tools: Canoe, CAN ape, Vflash, JTAG, CAMEO (CORE DOE and SDS), INCA and AVL PUMA, Concerto
- Expertise in combustion optimisation tools like torque meter / Swirl/tumble paddle flow bench, PIV/ Port flow Benchmarking, evaluation of AVL Single Cylinder Optical Engine, expertise in Visio knock /flame, fuel SMD/flow and spray optimisation, hot gas test benches for back pressure optimisation and GCA (Gas Exchange),
- Engine Strip down and friction optimisation, SOx Calibration for emission optimisation for 3-Way Catalyst.
- Worked on complex strategy engines with Dual VVT, Low Pressure cooled EGR, Dual Injection and Integrated Exhaust manifolds to achieve RDE targets for passenger Vehicle.
- Fuel specifications analysis as per BS Norms for the availability of Ethanol & RON value using various instruments.

Publications

- Effect of Muffler Characteristics on Performance of a Naturally Aspirated SI Engine (13CVI-0262/2013-01-2834), SAE in Nov'13.
- Taguchi-Fuzzy Based Mapping of EDM-Machinability of Aluminium Foam at Faculty of Mechanical Engineering in Slavonski Brod
- Parametric Study of the Machinability of Aluminium Foams by Electro Discharge Machine (p-ISSN: 2163-2405 e-ISSN: 2163-2413) at National Conference on Recent Advances in Manufacturing Technology, Mar'09

Certifications and Trainings

2022: Level II: Hybrid Electric Vehicle Service Operation and Maintenance (Calex UK)
2023: DTS Monaco, Vehicle Diagnostics
2023: Vector CAN Ape, Canoe Application and Usage
2018: AVL Cruise (AVL Graz, Austria)
2017: PIV & Port Flow Benchmarking FEV, Aachen
2016: CAMEO & GCA (AVL Graz) Training
2011: AVL Concerto, AVL PUMA (AVL Graz, Austria)
2011: Service & Principles of Analysers- HORIBA Japan
2011: Advanced Engine Combustion Diagnostics IIT

Date of Birth: 19th September 1985

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Language Proficiency: English (Fluent), German (Basic)

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