

Principal Engineer - HV Battery Design

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Company: Tata Technologies

Location: United Kingdom

Category: architecture-and-engineering

At Tata Technologies we make product development dreams a reality by designing, engineering and validating the products of tomorrow for the world's leading manufacturers. Due to our continued growth we are now recruiting for a Principal Engineer - HV Battery Design to be based at our office in Warwick, UK.

Our Engineering Research and Development department (ER&D) is a fast-growing function within Tata Technologies Limited that is assembled to work on exciting projects globally for multiple customers. It comprises highly specialized engineers across Automotive, Aerospace and Industrial Heavy Machinery.

THE ROLE

As a Lead Design Engineer, you will lead the electro-mechanical HV Battery System Design activities from system engineering and concept through to validated product for engineering sign off.

You will support the development of Packs for different markets by being familiar with and adhering to latest norms and legislative requirements.

You will be required to support early stage development and benchmarking, design, virtual and physical validation and DFM/Industrialisation bringing your own lessons learnt and experience to all aspects of the design process.

Our e-Powertrain domain and EV development is a growing area for Tata Technologies Limited. This position would be working within the Engineering Research and Development area of Tata Technologies and specifically on HV Battery and also potentially

supporting vehicle programmes.

The position requires a highly motivated person and team player who design and develop the HV Battery and System for different configurations and platforms.

AREA OF RESPONSIBILITY

Lead the team and suppliers for the design & development of Electric Vehicle Battery System Design and use cases.

Lead electro-mechanical design and its related system engineering and requirement creation; supporting the wider system engineering function.

Be responsible for the CAD design and packaging of all the components that make up the battery pack, including cells, module, cooling systems, electrical and mechanical distribution, venting/thermal/safety strategies and vehicle integration.

Lead the design and development discussions to deliver robust fault free designs through the application of Concurrent Engineering disciplines including DFMEA, DFA, DFM, Campaign Prevention Process, Robustness, etc.

Be expert with varying battery architectures, chemistries, cell integration (mechanically, thermally and electrically) and state of the art design practices.

Be well versed with the requirements of cell, module, and pack level integration within an application with ability to manage cascade or elevation of system requirements.

Prepare DVPs for battery systems and subsystems according to international standards and norms.

Validate that all products meet the specified requirements and project targets through a documented DVP.

Be expert with the ePowertrain systems, architectures and the battery's interfaces within that system.

Together with the HV battery team, ensure continuous quality improvement and cutting-edge technology for our global customers.

Support benchmarking of battery systems, sub-systems and at component levels.

Lead electro-mechanical failure mode and effect analysis of the various hardware features and implementation of prevention strategies

Review supplier capability via spec reviews, DVP assessment and DFMEA interrogation.

Have ability to manage structured technical change management facing customer, supplier and within the design/engineering process.

Assist in firefighting and ensure lessons learned are captured in component/system requirements.

Involvement during vehicle system and strategy discussions to meet vehicle requirements and ensure all functional safety requirements are captured.

Work closely with the other electrical and CAE etc., teams.

Cross-functional engagement with other departments, such as safety, BIW and vehicle integration etc.

Skills

KNOWLEDGE / EXPERIENCE

Driven to delivering high quality projects, on time and budget, beyond customer expectations.

Experience of lithium-based cell technologies.

Deep knowledge and experience of HV safety, and creepage and clearance requirements.

Experience of structural design and plastics/sheet metal design and manufacturing techniques.

Experience of Design and Analysis Tools used in support of your designs such as FEA or CFD and competent in CAD systems such as CATIA V5.

Excellent knowledge & experience of GD&T, drawing and assembly document creation.

Working experience with Standards like ECE R100, ISO 26262, ISO 16949, LV 123 and GBT etc.

Documentation of DFMEA, DVP, Timing Plans, Minutes and Actions of Meetings.

Experience of Battery systems development processes

Previous experience of OEM or tier one automotive systems.

Experience using DOORS Systems or any other platform to manage system/components requirements.

Strong track record of delivering significant high value business and delivering to very tight timescales.

Degree in Mechatronics, Mechanical or Automotive Engineering.

Strong experience of CAD software, preferably CATIA V5, with the ability to create design concepts, assemblies, and fully dimensioned drawings.

You will have a good understanding of High Voltage Battery Systems and their associated architecture.

Able to work in a global team and on your own more autonomously.

Able to anticipate, translate and develop customer requirements into tangible feature developments.

Expertise in product design, develop & DV at cell, module, and battery pack systems.

Working experience with International standards like ECE R100, ISO 26262, ISO 16949 and GBT etc.

Experience with EE Architecture and the thermal management (component/system).

Understanding of Vehicle system elements (VCU, OBD and PDU

Able to actively participate in system FMEAs and related validation activities.

Ability to build relationships and influence customers

Experience of HV Battery and system development and the related New Product Introduction processes

In return for bringing your expertise to our business we offer a competitive salary along with excellent benefits including:

Pension Scheme – We match employee contribution up to 5% of salary

25 Days' Holiday

Private Health Care

Tata Jaguar Land Rover Privilege Scheme - up to 20% off new JLR vehicles

Group Income Protection

Health Assured – Employee Assistance Program

Group Life Assurance

Childcare Vouchers

Health Shield – Private Health Cash Plan

If you are passionate about bringing innovation to the projects you work on and want to join a global company, then this is the place for you.

Tata Technologies: Engineering a better world.

Tata Technologies would like to thank all applicants for their interest, each application will be reviewed against the set criteria for the role. We would like to advise that only candidates under consideration will be contacted. If you do not hear from us within 10 working days following the closing date it will mean that unfortunately your application has not been successful. We will however retain your details for any suitable future opportunities.

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