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## Job description

Job title: **Development Engineer**

Department: Catalyst Technology

Date: January 2022

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The role of Development Engineer will be based in the research and development site located near Columbus, Ohio.

## The role within the company

As an experienced Development Engineer, you will be an integral part of the Velocys technical team which provides solutions supporting development and deployment of Velocys' catalyst and microchannel reactor technology, in support of Velocys and third-party projects. You will be responsible for the designs, implementations and maintenance of robust processes and data systems, for technical demonstrations involving continuous processing of gas and liquid streams. Furthermore, you will also conceive, design, and deploy ad hoc systems for executing novel processes requiring data gathering, capability demonstration, and, or concept realisation in support of commercialisation. The demonstrations range in scale from bench equipment through work on full-scale commercially deployable systems, involving occasional handling of granular catalyst samples ranging from gram-to drum-scale. The role will require you to work with internal collaborators to plan and execute the design, installation, and commissioning of required systems, while meeting schedule and budget. In some cases, the hardware or software solution exists, and in other cases you will be required to conceive and develop them. In addition, you will be responsible for ensuring that control and execution facets of the demonstration work safely, effectively, and as intended.

To be successful within this role, you will be able to demonstrate you possess the ability to deliver thorough fact-based engineering decisions, through a collaborative approach. Equally, you will have a proven track record of being able to prioritise your workload, while proactively communicating and managing the expectations of the stakeholders and the wider business in respect of delivery timescales and commitments, recognising the constraints which may be in place at any given time. This role is often fast paced and requires the individual to remain calm under pressure

## Primary responsibilities and significant duties

- Collaborate with stakeholders to define engineering project requirements, select approach within given constraints, and plan schedule and budget
- Construct or modify test systems according to Velocys best practices to achieve specified functional requirements safely, including process hardware, operator interfaces, and data acquisition
- Lead conceptual design, project planning and execution related to demonstrating commercial readiness of discreet processes and practices surrounding the overall Fischer-Tropsch synthesis system
- Apply and document sound engineering practices for gathering and analysing statistical data, executing standard root cause analyses, and similar processes in support of commercial deployment readiness verification.

## Additional duties and responsibilities

- Participate in or lead safety reviews for existing or new processes Job Safety Analysis (JSA), Product Hazard Analysis (PHA), Hazard Operational Analysis (HazOp)
- Instruct and familiarise collaborators regarding system operation using prepared documentation
- Specify and source equipment to address new challenges or improve upon existing processes
- Perform continuous improvement activities to increase group productivity
- Utilise statistical process control to illustrate when process units are performing properly and to establish control limits.

## Organisational interactions

- Immediate supervisor title: Deployment Engineer
- Next level supervisor title: Director of Catalyst
- Collaboration with other individuals and groups:
  - Reactor design and manufacturing group
  - Process Engineering
  - Analytical team.



## Education and experience

- At least a B.S. in Chemical, Electrical or Mechanical Engineering, Physics, or a related physical sciences discipline
- Proven relevant experience post-degree in a pilot plant or R&D environment
- Experience in translating customer needs into technical solutions in the area of process hardware development or logic controls, together with experience of factory acceptance testing (FAT)
- Demonstrated safe working practices surrounding control of hazardous energy
- Experience of Change Management
- Proven ability to understand the objectives of technology development personnel and translate them into practical equipment, methodologies, and data generation and analysis to meet those objectives
- Ability to produce proposals, progress reports, and close-out reports drawing upon clear communication skills
- Demonstrable experience in design, specification, vendor selection, procurement, construction, shakedown, and operation of process and control systems as applied to chemical process test apparatus
- Ability to understand and generate process documentation (e.g., PFD, P&ID) with standard drawing tools, e.g., Microsoft Visio or AutoCAD
- Familiarity with specification, installation and calibration of safety and process instrumentation
- Exposure to industrial or laboratory control systems and philosophies, including PLCs, PID loops, pumps, valves, HMI programming, logic diagrams, and/or cause & effect matrices
- Ability to interpret wiring diagrams or schematics
- Ability to manage construction programs against schedule and budget, utilising standard planning tools such as Microsoft Project, and to coordinate project contributors

## Contact

Please send your CV and a brief covering letter to: [careers@velocys.com](mailto:careers@velocys.com).

