

Graham Meadows, P.Eng.

EXECUTIVE SUMMARY

Mechanical Engineer with 18+ years experience focused on high pressure testing with majority specialized in alternative fuels (H2, CNG)

Industry expert on hydrogen fuel systems and high pressure gas testing

Technical committee member for multiple H2 and CNG industry standards (ISO CSA, SAE)

EXPERIENCE

Project Manager, Validation and Certification 2015-Present

Westport Power Inc. (GFI Division), Cambridge, ON

- Manage GFI's alternative fuel system component testing laboratory
- Responsible for validation and certification testing within internal lab and externally
- Project manage test programs related to hydrogen and CNG component Type Approval including all regulatory documentation
- Represent GFI at industry standard committees

Manager/Group Lead, Vehicle Fuel System Testing 2007-2015

Powertech Labs Inc., Surrey, BC

- Focus on business development and project management of key testing projects for international automotive OEM clients (USA, Germany, Japan)
- Responsible for validation/performance testing of 70 MPa hydrogen fuel systems for fuel cell electric vehicles and other alternative fuel clients
- Manage proposal development, pricing strategies, and contract negotiations to secure high profile testing projects
- Manager and leadership positions for various teams of Engineers, Technologists, and Technicians to prioritize and deliver test operations safely, on time, and on budget
- Design high pressure test facilities and systems including P&IDs, DAQ instrumentation, HAZOPs and DFMEAs

Project Engineer/Service Manager 2003-2007

hma Systems Inc., Brampton ON

- Engineering design, manufacture, and installation of custom industrial pressurized fluid and adhesive dispensing systems
- Manager of Service Department; including coordination and scheduling of maintenance activities for service technicians in house and in the field
- Liaising with customers, supporting sales in a technical capacity and marketing efforts
- Supervision of internal machine shop including quality control

EDUCATION

University of Waterloo

1998-2003

- Bachelor of Applied Science in Mechanical Engineering
- Received NSERC Undergraduate Student Research Award
- CO-OP placement with Powertech Labs working on hydrogen storage system and fuel system component validation testing
- CO-OP placement with GFI Control Systems working on design improvements for in-tank hydrogen valves and regulators.

PROFESSIONAL ASSOCIATIONS, MEMBERSHIPS

Engineering Associations

- Professional Engineers Ontario

Active Industry Committee Involvement

- ISO TC 197 – Hydrogen Technologies (SCC Mirror Committee Chair)
 - WG18 for Gaseous hydrogen land vehicle fuel tanks and TPRDs
- ISO TC 22/SC 41 – Gaseous fuels (SCC Mirror Committee Chair)
 - WG3 Fuel system components for vehicles propelled by gaseous fuel
 - JWG5 Fuel system components for blends of natural gas and hydrogen
 - WG7 General safety requirements for gaseous fuelled vehicles
- UN GTR No. 13 – Global Technical Regulation on hydrogen & fuel cell vehicles
 - Informal Working Group, Task Force 3 participant for test procedures
- CSA HGV 3.1 & NGV 3.1 Technical Subcommittee, Fuel system components for compressed hydrogen and natural gas powered vehicles
- CSA PRD 1 & HPRD 1 Technical Subcommittee, Pressure relief devices for compressed hydrogen and natural gas vehicle fuel containers

Previous Industry Committee Involvement

- CSA HGV 4.3 Technical Subcommittee, Test methods for hydrogen fueling parameter evaluation
- SAE Fuel Cell Interface Task Force, Vehicle fuel cell systems and interfaces to the vehicle
- SAE Fuel Cell Safety Task Force, Safety requirements unique to hydrogen and fuel cell vehicles

PUBLICATIONS

Johnson, T., Ainscough, C., Terlip, D., Meadows, G. et al. *Development of the HyStEP Device*, SAE Technical Paper 2016-01-1190, 2016

Schneider, J., Meadows, G., Mathison, S., Veenstra M. et al. *Validation and Sensitivity Studies for SAE J2601, the Light Duty Vehicle Hydrogen Fueling Standard*, SAE Int. J. Alt. Power, 3(2):257-309, 2014