

CURRICULUM VITAE

Richard F. Haley, M.Sc., P.Eng.

ACADEMIC QUALIFICATIONS

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| 1986 | Master of Science in Electrical Engineering
University of Alberta
Thesis Title: “A <i>Schlieren Study of Flame Initiation</i> ” |
| 1982 | Bachelor of Science in Electrical Engineering
University of Alberta |
| 1978 | Bachelor of Science in Biology and Chemistry
University of Alberta |

PROFESSIONAL ASSOCIATIONS AND MEMBERSHIPS

- Member, Association of Professional Engineers and Geoscientists of Alberta (APEGA)
- Member, Institute of Electrical and Electronics Engineers (IEEE)
- Member, International Society of Automation (ISA)

PROFESSIONAL CAREER

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| 2012 - Present | ANDERSON ASSOCIATES CONSULTING ENGINEERS INC.
Contract Electrical Engineer, P.Eng. <ul style="list-style-type: none">• Conduct investigations of electrical accidents, electrical fires, and high voltage contact incidents |
| 2007 - Present | WIRTANEN ELECTRIC TRAINING FOUNDATION
Instructor <ul style="list-style-type: none">• Teach disadvantaged students pre-apprentice electrical training in order for them to attain a position as a first year apprentice electrician |
| 2003 - 2011 | SELF-EMPLOYED Richard F. Haley, Electrical Engineer
Consulting Electrical Engineer <ul style="list-style-type: none">• Conducted electrical investigations, including: hot tub fires, power line accidents, compressor motor failures, circuit breaker failures, tanker truck explosions, transformer explosions, and welding accidents. |
| 2002 - 2003 | WIRTANEN ELECTRIC LTD.
Electrical Engineer <ul style="list-style-type: none">• Performed calibration and inspection of rental and customer equipment• Oversaw and performed repairs, maintenance, and operation of equipment for customers |

1985 - 2001

UNIVERSITY OF ALBERTA, Faculty of Engineering
Specialist Technician

- Responsible for two research laboratories for graduate students at the Masters, Ph.D., and postdoctoral levels
- Provided guidance, safety, and continuity for students
- Designed, fabricated, and ran experiments
- Lectured on structured programming, basic circuit theory, and microelectronics
- Maintained a small network of computers running UNIX, Linux, DOS, and Windows for laboratory use
- Conducted tours of the Electrical Engineering department for the public

Research Assistant to Dr. Peter Smy

- Studied arc and glow discharges, sparks and flame initiation
- Designed and built a schlieren camera which occupied 20 meters in total length illuminated by a 200 nanosecond pulsed laser diode.

PUBLICATIONS

Haley, R. F. *A Schlieren Study of Flame Initiation*. M. Sc. Thesis. University of Alberta, 1986.

Haley, R. F., Simeoni, D., and Smy, P. R. *Flow and pressure transients in a Pulsed Plasma Jet*. Canadian Journal of Physics, 1987.

Haley, R. F. and Smy, P. R. *An Inexpensive Light Source for High Speed Schlieren Photography*. Journal of Physics E: Scientific Instruments, 1988 (later reprinted in a Reprint Journal).

Haley, R. F. *Combustion Chamber Pressure Measurement At Very Early Times: Comparison of Plasma Jet Ignition with Conventional Ignition*. Combustion and Science Technology, 1989.

Haley, R. F., and Sty, P. R. *Electrically induced turbulence - the short duration spark*. Journal of Physics D: Applied Physics, Volume 22 (1989), pages 258-265.

Gardiner, D. P., Bardon, M. F., Dale, J. D., Smy, P. R., **Haley, R. F.** *Improving the Operation of Gasoline & Methanol Fuelled Spark Ignition Engines under Canadian Winter Conditions*. SAE 920011 Proceedings of 1992 Subzero Engineering Conditions Conference, Helsinki, Finland.

Au, S., **Haley, R. F.**, Smy, P. R. *The Influence or the Ignitor Induced Blast Waves Upon the Initial Volume and Expansion of the Flame Kernel*. Combustion & Flame, 1992.

Haley, R. F., Smy, P. R. *Ablation by Pulsed Plasma Jets*. Journal of Physics D: Applied Physics, 1993.

Dawe, J.R., **Haley, R. F.**, et al. *Plasma Jet Ignition of Methanol at Sub-Zero Temperatures*. Journal of Automobile Engineering, 1994.

Checkel, M.D., **Haley, R. F.**, Smy, P.R., Ting, D.S-K. *Early flame acceleration measurements in a turbulent spark-ignited mixture*. 1994 SAE International Congress & Exposition, paper 940687.

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Date

April 10, 2012