

Name: Stephen Daemon Andrews **BSc. MEL. C.Eng**  
Home Address: 46b Norfolk Road, Sheffield, S.Yorks S22SY, UK  
Telephone contact: Home (int+44) 0114 275 5408  
E-mail: [stephen@daemonenergy.com](mailto:stephen@daemonenergy.com)

### Professional Experience

- Chartered Engineer and Member of the Energy Institute
- Hands-on management style; I have led the design and development of burners, central heating boilers, water heaters, fuel cell systems and heat pumps.. I have managed teams for over 21 years.
- 28 years of industrial and consultancy experience in system design.
- I have an extensive experience of working world wide.

**08/12 to present**      **Returned to Daemon Energy consultancy work**

**09/08 to 08/12**      **Danfoss Heat Pumps UK**  
**Title:** Technical manager  
The setting up of heat pump installation training courses  
The design of training rigs for both Danfoss and British Gas,  
Heat pump system design for both domestic and commercial installations  
Onsite fault diagnostics and failure modes.  
The Danfoss technical representative to various MCS heat pump working groups

**04/08 to 08/08**      **Gledhill**  
**Title:** **Consultant Engineer**  
The design and development of a heat recovery system for a cramic solid oxide fuel cells in partnership with CFCL and EON. Design of test rigs and data acquisition systems  
Study of phase change materials for heat recovery

**12/06 to 6/07**      **Voller Energy Plc. Basingstoke, UK.**  
**Title:** **Consultant Engineer.**  
Design and development of internal complete water recovery system for a 1kW CHP fuel cell system, concept for a heating and cooling system for use with the system, and input to reduce costs of the system by the use of off the shelf components and cheaper materials.  
A study of enthalpy wheels for cooling and heat recovery.

**2006 to 2008**      **Daemon Energy**  
Started up my own business to promote energy efficiency and to contract my services to OEMs with respect to product development,

**10/04 to 03/05** **Nuvera Fuel Cells.** Cambridge, Massachusetts, USA.

Title: **Senior Manager and Avanti Platform Leader**  
Company size: 100 in the USA and 45 in Italy, financed by 4 major partners.

**Role:** I was employed to carry out was as Operational Manager for the Avanti Platform leading a fully cross functional team of some 24 people, within a standard matrix organization. I was brought in to prepare the Avanti Gen3a and  $\beta$  5kW CHP systems for commercialization with our Japanese partners, by assuring that performance, reliability, budgetary, and cost objectives were met. The next phase was then to progress to the Avanti Gen4; this was to be the fully industrialized unit. Company priorities were changed due to changes in the policy of the Japanese government with respect to subsidies (i.e. changed to cover 1kW CHP systems only), resulting in the prioritizing of other products (Forza, see <http://www.nuvera.com>) with immediate commercial value. Therefore the Avanti Gen4 project was to be rolled back and downsized.

**07/02 to 07/04** **CellTech Power inc.** Westborough, Massachusetts, USA

Title: **Senior Systems Engineer** (Combustion / Mechanical).  
Company size: 25, was financed by Venture capital, investments halted at beta stage, staff reduced from 25 to 8.

**Role:** To ensure that the product can be industrialized at reasonable investment levels and final appliance production costs.  
To develop both Burner and heat exchanger concepts and designs.

**Projects:** Tunnel burner designed to be enclosed within a high temperature environment (1000°C) and 24/7 operation for 10 years. Project 80% complete.  
High temperature air/air heat exchanger concept for temperatures from 20°C to 1100°C. Project 30% completed.  
Plasma reforming of propane and methane, project on hold at present due to low efficiency of conversion with respect to primary energy cost, possibilities still exist for a significant improvement.  
Concepts of low power and low cost units presented to try and save the company.  
Cost projections 50% complete.

**01/99 to 06/02** **Moulinex-Brandt Cooking division.** Orleans, France

Title: **Division Laboratory Manager**  
Company size: Division 1700 and 22000 worldwide reduced to two companies of 4000 in chapter 11.  
Division reduced to 1200 we became Elco-Brandt  
Brands: Brandt, DeDietrich, Samet, Krupps, Sauter, Moulinex, Polar, Bloomberg, Ocean etc.

**Role:** Management of 8 engineers and technicians and from 5 to 9 major projects per year. I was responsible for both the laboratory budget and certification (AFNOR, IGNIG, ISI, LCIE, LPGL, and ISO 9001). I was in charge of certification by European and International test houses and the documentation related to these tests for all cooking appliances.

Projects: A new concept of gas burner for cook tops for both high efficiency and rapid heating, patent and prototype completed.  
Development of a new range of high efficiency ovens, with very low heat loss project was completed on time and within budget.  
Improvements to existing products, with particular reference to quality aspects for customer satisfaction.  
Creation of laboratory procedures to improve product development efficiency and to improve communications with the marketing and quality departments.  
Start up projects to design new products for Korea and China completed on time and within budget.  
Ninety five percent of projects were completed on time and within budget.

**01/94 to 01/99 Saunier Duval ECC, Hepworth plc, Nantes, France**

Title: **Thermal and Combustion Systems Manager**  
Company size: 850 on site and 2000 within the division and 11000 in Europe, now part of the Vaillant group.  
Brands: Saunier Duval, Hermann, AWB, Unical, Glow-Worm, San Giorgio, Polar.  
Role: Management of 5 engineers 6 technicians and 3 project designers. I was in charge of the 3 year research plan and individual project planning, approved by both the strategic marketing group and the board of directors.  
Inter group sales of components made in Nantes, transfer of technology within the group and the standardization of components made or used within the group.  
Responsible for burner and heat exchanger research and development for the group and technical consultant for the related production lines in terms of investments, technology, environmental impact and component production costs.  
Projects: Defined a new heat exchanger and burner catalogue, that was designed, developed and produced to be suitable for any appliance manufactured within the group; project was completed on time and at only 50% of the initial budget.  
Industrial marketing and group synergy worked with senior directors to ensure component standardization and costs were applied throughout the group.  
Implementation of ISO 9000 to all existing drawings project finished on time and budget.  
Painting of heat exchanger with aluminum oxide and removal of lead dipping completed on time and within budget.  
Burner manifold concept patented and produced  
Low NOx flame port design patent.  
Innovative clipping system for hot water pipes at pressures up to 40bar saving \$1,500,000 per year.  
New research laboratory design and built on time and within budget.

**06/92 to 01/94 Nefit-Fasto, Deventer, Netherlands**

Title: **Internal consultant for Burners and heat exchangers**  
Company size: 350 on site and 800 within the division and 5500 in Europe, part of the Buderus group.  
Brands: Nefit, Fasto, and Buderus.  
Role: Research and development of innovative low NOx burners and cast aluminum heat exchangers acted as consultant within the group.  
Projects: Joint ceramic burner project with Rinnai Corp Japan, project finished on time and cost constraints were met.  
Condensing boiler concept and aluminum heat exchanger presented for future development.

Discovered innovative resonance damping technique for premixed burner systems by means of a venturi on the burner fan inlet to the burner, this system is now used throughout the industry unfortunately it was not patented.

The project was successfully completed;

**06/88 to 06/92 Worgas Bruciatori** Formigine (Mo) Italy

Title: **Research and Technical support Engineer**

Company size: 75

Role: Research and development of innovative low NOx and standard burners, technical support for burner integration for boiler manufacturers throughout Europe and the Soviet block.  
Management of 3 technicians.

Projects: Low NOx atmospheric and premixed burners for new pollution requirements with particular success, we sold over 3.5 million burners to Buderus, Vaillant, Stelrad, Electrolux, Riello and many other industrial groups.

**06/84 to 06/88 Main Gas Appliances**, Myson, Padiham, UK

Title: **Research and Development Engineer**

Company size: 850 on site and 2000 within the division now part of Baxi Heating.

Brands: Main Gas

Role: Research and development of gas fires and water heaters.

Projects: High efficiency insert gas fire from concept to production.  
Reverberant sound chamber calibration and operation

**Additional Information**

**Date of Birth:**

May 6<sup>th</sup> 1960.

**Nationality:**

Dual citizenship USA and GB.

**Patents**

I have the credit for several patents.

**Work Related training programs and studies** (External and internal training courses over the last 18 years).

Technical management.

Project management of multiple projects.

Management by objectives and performance.

Industrial Marketing, Industrial synergies, technical sales and support.

All related European and International standards and approvals for boilers, water heaters and ranges.

The implementation of ISO 9000 and Factory mutual approval.

Burner design for both gaseous and liquid fuel fired boilers, water heaters, ranges, up to 800 kW, with reference to low NOx burners

Acoustics and noise control with particular reference to aerated burners

Fuel cell systems, with reference to high temperature SOFC's.

The forming, molding, extruding and machining of copper, brass, steels, and aluminum parts.

The technology and use of super alloys such as Haynes 214, Fecralloy, inconels and MA956 etc.

Mathematical concepts of finite element analysis.

Failure mode analysis, risk management and lean six sigma.

Benchmarking, functional analysis and brainstorming procedures.

Heat Pump system design.

**Foreign Languages**

French: Spoken and read fluently

Italian: Spoken and read fluently at one time now rusty.