

CURRICULUM VITAE

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B.Met (Hons), D.Phil (Oxon), C.Eng., FIMMM

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PERSONAL DETAILS

Status: Married.

Nationality: British.

Date of Birth: 3/11/1960

EDUCATION

1983 - 1985:	Manchester Polytechnic. <ul style="list-style-type: none">• B/TEC HND in Metallurgy - July 1985
1985 - 1988:	University of Sheffield. <ul style="list-style-type: none">• B.Met (hons) in Metallurgy (First class) - July 1988
1988 - 1992:	St. Catherine's College, University of Oxford. <ul style="list-style-type: none">• D.Phil. (Materials Science) - April 1992.

PROFESSIONAL CAREER

March 2013 – Present day

Consultant Metallurgist – Eastham Engineering Consultancy Pte Limited, Singapore

- Specialist in turbine damage assessment and root cause failure investigation.
- Areas of expertise - steam and gas turbine engineering, materials and protective coatings, creep and fatigue damage mechanisms, oxidation and corrosion, component lifing methods and failure mechanisms, inspection tools, product / process developments for high temperature power generation plant.

May 2007 – February 2013

Principal Consultant – Turbine Engineering, Quest Integrity NZL Ltd., Wellington, New Zealand

- Principal consultant specialising in steam and gas turbine materials and life management services to power generation and petrochemical industries. An applied, field engineering role that used much of my past experience to provide independent life extension and management expertise to plant owners.
- Developed the turbine engineering consulting business within Quest Integrity and employed up to 20 members of staff in a variety of roles, including component stress analysis and life assessment, structural integrity and defect assessment work, on-site inspection, condition assessment, mechanical and metallurgical testing.
- Project and technical management of life management support and development projects within the framework of the Australian Gas Turbine Users Forum (GTUF), which I played a key role in establishing.
- Performed numerous failure investigations on gas and steam turbine equipment and provide materials engineering consultancy services to insurance companies, loss adjustors and power operators. Performed on-site assessments as to the condition of components for further operation or rejection during emergency shutdowns.
- Conducted training workshops on gas turbine materials and lifing methods and failure investigation techniques across Australasia and South East Asia, including ASME IGTI.

September 2004 – April 2007

Project Leader & Principal Engineer, ALSTOM Power Steam Turbines, Rugby

- Project and Technical Management of several programmes aimed at high efficiency steam turbine plant (rotors, stainless steels and nickel alloys for blading applications, labyrinth seals / brush seals, coatings).
- ALSTOM Project Leader for DTI funded European collaborative project aimed at developing advanced rotor and pressure vessel steels for next generation plant.
- Co-ordinated several internal projects aimed at qualifying full-scale manufacture and welding of advanced high temperature steels and the development of erosion and oxidation protective coatings for steam turbine plant.
- Provided materials selection and data & life assessment analyses for the new equipment, retro-fit and overhaul steam turbine businesses within ALSTOM.
- Member of Steam Turbine Materials Steering Committee at ALSTOM.

April 2001 – August 2004

Head of Materials Technology, ALSTOM Power Technology Centre, Whetstone, Leicester

Principal Materials Engineer and Head of Materials Technology, responsible for the Project and Technical Management of a number of advanced gas turbine materials projects:

- Creep, thermomechanical fatigue and crack growth modelling of gas turbine combustor alloys.
- Creep and fatigue of single crystal superalloy blading materials and thermal barrier coatings.
- Testing and Life Assessment of investment cast and forged titanium aluminide alloys.
- Development and manufacture of turbine disc materials/components and lifing methods.
- Development and validation of high nitrogen ferritic IGT rotor steels.
- Development of high temperature thermal and environmental barrier protection coatings.
- Numerous materials evaluation projects – alternative compressor and hot section materials.
- Materials evaluation for near-zero CO2 emission cycle programme (GASZEP).
- Brush seal development - fretting and wear characteristics of GT seals.
- Brazing, weld repair and overhaul of GT materials and components.
- Data analysis and interpretation (fatigue and creep life modelling).
- Industrial sponsor for a number of University-based, EPSRC / DTI / ALSTOM funded projects.

Management of the Materials Group at the Technology Centre, with responsibility for the Metallographic Analysis facilities. Conducted failure analysis and metallurgical inspection of production parts and field exposed parts.

Direct Line Manager for 10 members of staff, with responsibility for management of more than 15 members of staff.

Management of Materials Technology development programmes as the materials expert for the Technology Steering Committee and contact point for external activities, such as the Brite EuRam EIMG Advanced Materials Cluster, NPL Industrial Advisory Group and several University materials departments involved in high temperature materials and coatings research.

Jan. 1995 – March 2001:

Principal Scientist, Project Technical Leader and Group Head with the Propulsion Engineering and High Temperature Materials Groups, Mechanical Sciences Sector, Defence Evaluation and Research Agency

Responsible for research programmes in the field of high temperature materials and gas turbine engine component life assessment. Researching the creep and fatigue behaviour of nickel-based superalloys, intermetallics and coatings.

Managed and prepared numerous bids for funding from UK MOD, DTI and the European Commission on development of high temperature fatigue and creep of high strength nickel-based disc alloys, development of advanced lifing methods and the elasto-plastic-creep modelling of turbine blades, combustor alloys and structures.

Responsible for preparation of technical and customer reports, as well as external publications in journals and at conferences. Provided logistics support to HMG platform integrated project teams (IPTs) that manage the RAF's engine fleet. A key role was the analysis of component usage data, statistical modelling and risk assessment as well as advice provided to the Royal Air Force, Royal Navy and MOD/DTI on gas turbine engine materials and component life assessment methods.

Represented HMG at MOD/Rolls-Royce engine demonstrator review meetings and international collaborative research programmes. Actively involved as technical monitor for extramural research and development programmes at Rolls-Royce and University departments within the RR UTC framework.

Conducted investigations into gas turbine engine failures, including report preparation and presentation and was responsible for technical management of the creep and fatigue testing facilities at DERA and made a significant contribution towards attainment of both UKAS and ISO 9001 accreditation for the materials testing laboratories.

SKILLS

- Experienced Project and Technical Manager.
- Fellow of the Institute of Materials, Mining and Minerals and a Chartered Engineer.
- Committee Member for the Institute of Materials, South East Asia and past member of the High Temperature Materials Committee in the UK.
- Keen team player with experience of team leadership and group management.
- Development and application of life assessment methods and materials properties for high temperature plant.
- Experience of failure investigations, laboratory management and the use of electron microscopy.
- Extensive knowledge of testing, fatigue and creep damage, fracture mechanics, manufacturing processes.

Signed:

Date: 5 February 2015.