

Dr. Katherine Louise Critchley

Tägernstrasse 19, Forch, 8127. Switzerland.
Tel Home: +41 43 366 0264 Mobile: +41 78 707 9707
email: kathy@critchley.biz

Skills and Expertise

- PhD in Mechanical Engineering. The project was to analyse the draw bending process as applied to small diameter thin walled tubes, and produce a structured scientific basis for the calculation of springback and elongation in order to enable the production of right first time components. The project was in collaboration with BWL Components Engineering Limited.
- Computer Literate. Having gained a Masters in Computer Aided Engineering, I have used numerous computer aided engineering packages, ANSYS, Peps, CATIA V5, Primes, I-Deas, AutoCAD (and AutoCAD Lt) and Euclid, and have knowledge of several programming languages, and am a competent user of MS office and various mail packages.
- Current training - Catia V5 Airbus Functions, Catia V5 Airbus Methods, Catia V5 Systems Admin, Primes 2 Designer, Primes 3 Designer, Smarteam Administration.
- Background in engineering design and design principles. I completed the EITB Basic training certificate. I have taught engineering design and design principles at both degree and post graduate level.

Employment History

2011 – 2008

Surrey Satellite Technology Limited.

Configuration Manager SmarTeam PLM

Responsible for managing the implementation of Product Lifecycle Management (PLM / PDM) process within SSTL.

SSTL has implemented SmarTeam PLM for project documents. I have been responsible for managing the upgrade of Smarteam from V5 r16 to V5 r20. In order to optimise the current install; significant process changes have been included as part of the upgrade, as well as some scripted productivity tools. This has involved working with the Engineering teams to understand the engineering processes; and with the Smarteam Value added reseller, to understand how these can be best implemented within the Smarteam environment. Managing the full upgrade process, including the setup and testing of the upgrade on virtual machines. Being responsible for ensuring that all changes are fully documented and communicated to the users. Providing user support, both to individual users and through the production of quick help guides.

I have been heavily involved in the selection and evaluation process for company wide MCAD software solution. This process has been evaluating the current software used by the MCAD teams and assessing the suitability for company growth. Unifying the MCAD teams with a single MCAD package, and a single set of processes. Starting the Integration process of MCAD data into SmarTeam. Managing the integration process, having a virtual machine configured in order to test these new processes, within the Smarteam environment. Defining a strategy for managing the historical data, without full integration of the various MCAD packages within SmarTeam.

2008 – 2005

Atkins Aerospace

Design Engineer

Design, Primes 2 / 3, Catia V5 (Airbus)

A400M Responsible for DMU control of A400M fuel pump fairings package. Producing a scheme for a camera mount for flight test instrumentation (FTI). Assembly design producing Drawings to assist the assembly of forward of front spar components.

A380 Smoke Generator. Designing a FTI pylon for the installation of a smoke generator in order for tests to be carried out on the A380 to visualise the vortices produced on landing. My responsibilities involved liaising with the stress team in order to optimise the design of the front fork fitting and the 'bath tub' of the pylon.

Other responsibilities:

PDM. Assisting in the specification of a PDM system for use within Atkins. Assisting with the production of procedures with respect to any new software that is implemented.

A400M Level 4 Vault Access. Acting as the Atkins key contact assisting Airbus extended enterprise to install remote access onto the A400M vault.

Primes 3 key point of contact. / CAD support. Supporting any issues that occur with the Primes / Catia V5 users within Atkins and reporting issues to extended enterprise when necessary. Involved with the Cad support and IT support monthly meeting and liaising with IS in order to manage the cad installation and Design data configuration issues.

2001 – 2002

Linpac Storage Systems

Structural Engineer

Structural Design, Computer aided engineering

Producing the structural calculations required in order for the company to be able to design dedicated storage systems for the logistics industry. Supporting and developing a suite of structural analysis programs being produced in house using Delphi 5. Testing components for structural integrity using both theoretical methodologies including ANSYS, and producing experimental data. Using AutoCAD Lt in order to produce amended part drawings.

2000

Coventry University

Lecturer (Part time)

Design, including computer aided engineering

Working as part of a team: assisting in the teaching of design to undergraduates in Mechanical Engineering, Automotive engineering Design and European Business and Technology (EBAT). Main experience with teaching ANSYS, AutoCAD and Peps computer aided engineering packages.

1997 – 1998

University of Hertfordshire

Lecturer

Computer Aided Engineering

Working as part of a team: teaching Computer Aided Engineering to both undergraduates and post graduates. Main packages include Euclid, MS OFFICE, and DELPHI. Attended a 2-week training course on Euclid run by Matra Datavision at Matra Marconi Space.

1993 – 1996

Coventry University

Lecturer (Part time)

Design, including computer aided engineering

Working as part of a team: assisting in the teaching of design to undergraduates in Mechanical Engineering, Aerospace systems and Industrial product design. Main experience with teaching ANSYS, AutoCAD and Peps computer aided engineering packages.

1988

Motor Panels (Coventry) Ltd.

Systems Assistant

Using CATIA CAD and various spreadsheets / databases: while assisting in the Systems Department of Motor Panels (Coventry) Ltd., with main responsibilities being for the CAD plotting facilities.

1984 – 1986

EITB Technician Training

1st Year

EITB Certificate of Basic Training

Obtained within the training department of *Jaguar Cars Ltd.*

2nd Year

EITB Technician Training

Based within several companies including *Alvis (Design)*, *Blundells Ltd. (Design)*, and *Motor Panels (Coventry) Ltd. (Systems – Computer Aided Engineering)* with main interests being in Design and Computer Aided Engineering.

Education

1993 – 2002

Coventry University

Ph.D.

Structural Design and Computer Aided Engineering

Working within the University's Centre for Integrated Design: researching structural analysis software for the draw bending of small diameter thin walled tubes. Analysing the material behaviour of tubes during the draw bending process to enable right first time components through the prediction of springback (ANSYS FEA – linear static) and axial elongation (dedicated program).

1991 – 1992

Coventry University

M.Sc.

Computer Aided Engineering.

M.Sc. Project: Structural Analysis of a left-hand gear box mount.

The left-hand mount had failed during testing when the company had tried to change the design from cast iron to cast aluminium. The project was to establish the failure mode, this was achieved through a structural strength analysis of the aluminium part, using finite element analysis (I-Deas) and using the lab reports ordered after the failure. The failure mode was established as shrinkage porosity, which had been present in the aluminium casting.

1988 – 1991

Coventry University

B.Eng. (Hons)

Engineering 2:2

Final Year Project: Secondary Stresses and Ratchetting Strains in Thin Walled Tubes. A long running project within the mechanical division of the school of engineering has been to analyse the problem as established in Hill "The Mathematical Theory of Plasticity" of secondary stresses and ratchetting strains in thin walled tubes. The project was to assist the researcher by producing ANSYS Non-linear FEA models to cyclically load thin walled tubes under internal pressure.

1984 – 1987

Coventry Technical College

BTEC National Certificate

Engineering.

Publications

"An analysis of springback in the draw bending of small diameter thin walled tubes" presented at SheMet 1995

"Process Analysis Software for the prediction of elongation with respect to the Draw Bending of Small Diameter Thin Walled tubing." accepted for Journal of Materials Processing Technology, [Volume 167, Issue 1](#) , 25 August 2005, Pages 41-46