



PARD Conference

THE UNIVERSITY OF
WARWICK

Agenda

8th March 2006

8.30 – 9.30am Registration

9.30am Welcome from Dr Charles Carey
PARD Programme Director

Opening Address from Al Kammerer
Product Development Director Jaguar & Land Rover

10.00am – 12pm Seminars

12pm – 1.30pm Complimentary Lunch & Exhibition Viewings

1.30pm – 3.30pm Seminars

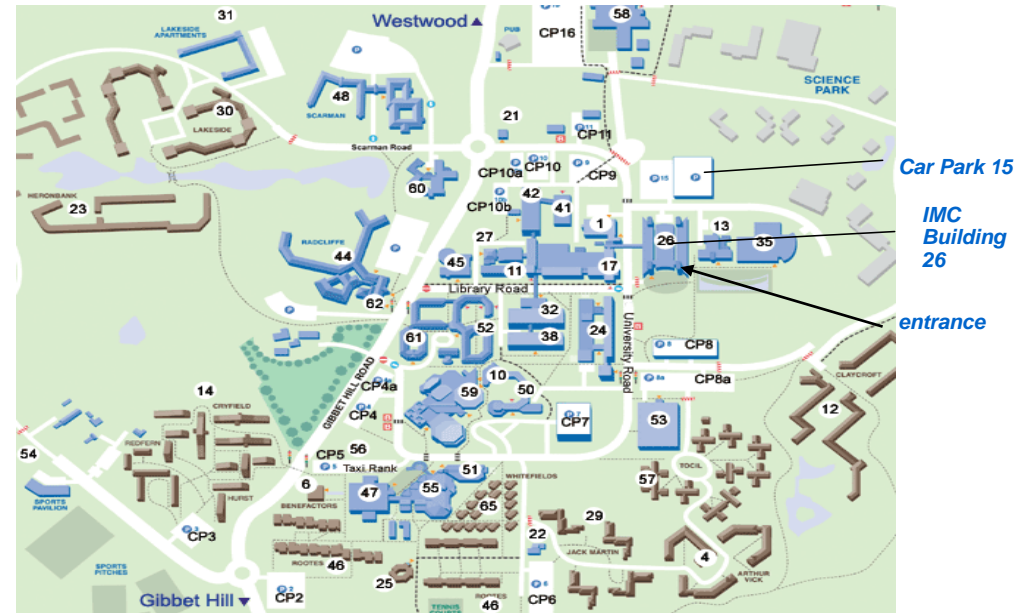
9th March 2006

10am – 12pm Seminars

12pm – 1.30pm Complimentary Lunch & Exhibition Viewings

1.30pm – 3.30pm Seminars

WARWICK UNIVERSITY CAMPUS



Conference held in IMC Building 26

•Conference & plenary area

•Displays and working demonstrations including electrical hardware in the loop, advanced joining techniques, interior air quality, CMM machines, software tools, etc

•Presentation sessions

•Complimentary Drinks and Lunch

•Register on www.iarc.warwick.ac.uk or telephone 02476 572 574



8th March

STREAM A - CAE modelling

Forming of AHSS Steel & Aluminium **10.00 – 10.30**

New materials have been characterised against traditional benchmark materials. Dimensional variation, forming strain analysis, metal thinning and blank development are some of the properties investigated

Materials Data Base Management **10.45 – 11.15**

A Knowledge Management System (KMS) which will provide functionality and a single point facility to extract and integrate information from disparate databases for the end user.

High Strain Rate Effects on Crash Structures **11.30 – 12.00**

Techniques to generate and validate material data at high strain rate, which are robust and economical in delivering accurate information to end users.

Stochastic Simulation of Crash Structure **13.30 – 14.00**

Stochastic analysis techniques, enables identification and ranking of noise factors, to a variety of automotive case studies to include full vehicle crash, occupant injury and pedestrian safety.

Simulation Parameter Sensitivity: Forming **14.15 – 14.45**

The stamping feasibility of sheet metal components is routinely assessed using simulation software and the effect of input parameter variation on formability has been studied.

Joining: local and global modelling **15.00 -15.30**

The results of the simulation and actual spot welded assemblies measured in the laboratory are compared.

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STREAM A - Process control

Supplier CMM/MSA **10.00 – 10.30**

The development of a supplier measurement data transfer network and the usage of dimensional information within the product development process.

Non Destructive Techniques for self piercing rivets **10.45 – 11.15**

Ultrasound, resonance spectroscopy using commercially available instruments.

Durability of Welded Structures: Measurement techniques. **11.30 – 12.00**

Thermo elastic and automated "real time" photo elastic stress analysis techniques will be presented together with a new method for measuring residual stresses.

Measurement and analysis techniques **13.30 – 14.00**

3D laser scanning and other services available for use by companies.

Predicting dimensional variation of assemblies **14.15 – 14.45**

Part Variation, Fixture Variation and the Joining Process are considered to contribute to the dimensional variation of an assembly. The limitations of two commercially available software packages are identified together with a vision of an ideal software tool for the future.

Dimensional Management: Slow/Calibration Build **15.00 – 15.30**

A calibration methodology for dimensional variation analysis simulation has been proposed that draws upon slow build methodologies and provides additional insight into product variation for use within the quality maturation process.

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STREAM B – Electrical systems diagnostics

Agile Software Integration **10.00 – 10.30**

New project management practices with cost and time benefits through reduction in late changes, rework activity and back-end project loading.

Software Planning **10.45 – 11.15**

A database approach to ease the management of software delivery planning bringing cost savings not only in the time saved but also through a better synchronised plan for integration and testing.

SysML Modelling Language **11.30 – 12.00**

Modelling a real-life case-study of an automotive system with a UML based language, bringing earlier capture of functionality problems and reduced downstream errors in development.

Bayesian Diagnostic **13.30 – 14.00**

An innovative diagnostic method capable of giving an optimised procedure to troubleshoot failure cases

Electrical Fault Analysis and Retification **14.15 14.45**

A web-based system is being developed to resolve the specific problem domain of fault correlation and analysis in electrical systems.

Model Based Diagnostics **15.00 – 15.30**

The actual physical component is modelled partially or entirely via simulation to tackle the problem in all stages of product life cycle.

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STREAM B - Electrical systems/Hybrids

Hybrids Vehicle Technologies **10.00 – 10.30**

The selection and implementation of hybrid vehicle technology can be gained through modelling a range of scenarios and outcomes.

Hybrid Vehicles **10.45 – 11.15**

An overview is given of the variety of architectures (electrical and mechanical configurations) featuring specific components that have been identified.

Business Case for Hybrid Vehicles Case Study **11.30 – 12.00**

A decision support tool is presented to assist understanding from a range of stakeholder perspectives.

H.I.L Simulation and Testing **13.30 – 14.00**

A simulation facility to provide a stable platform to commission test equipment 'offline' increasing confidence in both tool vendors and vehicle manufacturers alike.

Formal Verification for Model based Software Development **14.15 – 14.45**

Focus on issues such as ways to make the formalisation of requirements easy as well as identify modelling guidelines.

Validation of Complex Systems **15.00 – 15.30**

Innovative tools for the early and comprehensive validation of the design and implementation of complex distributed electronic systems.



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STREAM C - Skills

<u>Establishing people capability requirements.</u>	10.00 – 10.30
Techniques and processes that support the 'demand-led' philosophy of learning and development.	
<u>Developing capable people & organisations.</u>	10.45 – 11.15
How capabilities can be developed through activities aligned to business needs.	
<u>Delivering Business Benefit</u>	11.30 -12.00
How to align the impact of learning and development to business results.	
<u>Leadership & Management for Innovation</u>	13.30 – 14.00
How can we equip leaders to 'see' possible futures , to make decisions based on what it is they see and to effectively translate that vision into activity.	
<u>Value adding Technology Collaborations</u>	14.15 – 14.45
Collaborating with others has become an imperative for companies with limited resource and expertise in 'all' new technologies required for competitive advantage.	
<u>The PARD learning and development programme</u>	15.00-15.30
Some of the work related learning and development in a new accredited programme for team leaders and managers.	

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STREAM C - Logistics

<u>E Business – Workflow to Business Process</u>	10.00 – 10.30
Workflow products bring business & IT people together thus delivering business value. BPM (Business Process Management) technologies take that one step closer by empowering both parties.	
<u>Rfid and Wireless Tracking</u>	10.45 – 11.15
Use of RFID technologies for control and real time access to distributed information for the supply and distribution of material and products.	
<u>Reducing warranty costs with improved vehicle diagnostics</u>	11.30 – 12.00
A web based system to resolve the specific problem domain of fault correlation and analysis in electrical systems.	
<u>CAE in Emissions Certifications</u>	13.30 – 14.00
Improvements in methods and processes to reduce	
<u>Environmental Condition Recognition</u>	14.15 – 14.45
A solution for 'µ based road surface classification' using novel data processing techniques .	
<u>Process Engineering</u>	15.00 – 15.30
A low cost business process modelling tool which automatically generates project plans and a web-site to provide a complete description of the current or new process, the resources needed, and any process issues.	

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STREAM D - Joining

<u>Resistance Spot Welding of Aluminium</u>	10.00 – 10.30
The most commonly employed method for steel in the automotive industry - high speed and low cost. Overcoming the issues of weld consistency and electrode life to allow for production implementation.	
<u>Friction Spot Welding of Aluminium</u>	10.45 – 11.15
Derived from friction stir welding technology, it's principle benefit is rapid low cost joining of thin sheet	
<u>Self Pierce Riveting</u>	11.30 – 12.00
Improvements in the application process for aluminium to steel joints.	
<u>Laser Welding</u>	13.30 – 14.00
The current status of applications within industry and the expected developments to be made especially with Remote Laser Welding.	
<u>Cold Metal Transfer MIG</u>	14.15 – 14.45
CMT offers high productivity with good gap bridging properties and the ability to weld ultra thin material sections.	
<u>Granular Hot Melt Adhesive</u>	15.00 – 15.30
Process improvements for the robust application of an expandable gap filling adhesive allowing potential for off-site application and reduced waste.	

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STREAM D - New product introduction

<u>Working Across Organisational boundaries Part 1</u>	10.00 – 10.30
This first session will present the findings of research into collaborative product design and will focus upon OEM/supplier relations.	
<u>Working Across Organisation boundaries Part 2</u>	10.45 – 11.15
How the problems of collaborative design can be addressed in intra or inter-organisational working	
<u>Managing Workforce knowledge to develop better products</u>	11.30 – 12.00
The results of a collaboration to improve Knowledge Management in product development .	
<u>New Product Introduction</u>	13.30 – 14.00
The results of research into the New Product Introduction (NPI) process across different companies.	
<u>Assumption Management</u>	14.15 – 14.45
Successful management of front-end activities requires an integrated approach to assumptions management with respect to product strategy, product definition, project definition and organisational roles and responsibilities.	
<u>Knowledge Transfer in the NPI Process</u>	15.00 – 15.30
How to improve the effectiveness of knowledge transfer among the main actors involved in the New Product Product Introduction Process.	

STREAM E – Logistiics/Interiors

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Air Quality Performance Requirements **13.30 – 14.30**
Future vehicle specification and examples of current material performance improvement initiatives.

Measurement techniques and materials opportunities **14.15 – 16.00**
Developments in test methods and analytical procedures for assessment of vehicle interiors air quality.

Environmental workshop demonstration **16.00 – 17.00**

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STREAM E - Interiors

Voice of the customer Audit **10.00 – 10.30**
This session will introduce methodology which measures product quality level from a customer perspective, and explain its role within NPI and the supply base.

Switch Haptics & Measurement **10.45 – 11.15**
Methods used to assess how customers perceive switches, and the ways in which these subjective opinions can be used to generate objective specifications.

HMI – Initial Assessment Methodology **11.30 – 12.00**
A decision making tool to facilitate early selection of HMI technologies for future development.

Complexity Tool Sets **13.30 – 14.00**
Tools to assist how the complexity of a product affects its cost and profitability and how to minimise complexity.

Decorative Veneer Manufacturing Improvements **14.15 – 14.45**
Injection moulding, veneer characterisation, and clear film application to replace the traditional lacquer coating are supported by case studies on production vehicle interior trim veneer components.

Design **15.00 – 15.30**
Automotive design for alternative applications.

Warwick University Campus



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