

5th World Congress of MIRCE MECHANICS*

Woodbury Park, Exeter, United Kingdom, 1 – 3 June 2016

Science & Maths of Inherent Actions	09.00	1.06.2016	On Time
Science & Maths of Potential Actions	09.00	2.06.2016	On Time
Science & Maths of Continuous Actions	09.00	3.06.2016	On Time

HOUSTON CONTINENTAL 1505 3:15P 6 ON TIME

MIRCE Akademy Booking Now First Call

ISLIP NY DELTA 2310 2:55P 96 ON TIME

KANSAS CITY MO SOUTHWEST 109 4:35P 122 ON TIME

LONDON HEATHROW UNITED 918 2:19P 42 BOARDING

LOS ANGELES DELTA 333 3:25P 73 ON TIME

LOS ANGELES SOUTHWEST 143 3:40P 126 ON TIME

LOS ANGELES UNITED 231 4:25P 40 ON TIME

LOUISVILLE DELTA 2409 2:20P 94 ON TIME

MEMPHIS NORTHWEST 961 2:40P 36 CHECK IN

* MIRCE Mechanics is a scientific theory for
Managing In-service Reliability, Cost & Effectiveness.



A personal invitation from Dr Jezdimir Knezevic, Founder & President of the MIRCE Academy

Inspired by the work of scientists and equipped with the methods of their studies, during last 40 years I have been focused on systematic and rational studies of the in-service life of transportation, energy, communication, defence, health and similar human created and managed systems. The purpose of research was to create generic knowledge of the in-service behaviour of maintainable systems obtained through observational principles and quantitative reasoning under the name of Mirce Mechanics.

To rationally understand motion of maintainable systems through functionability states resulting from atomic, environmental and human actions, I have established the MIRCE Academy at Woodbury Park in 1999. Staff, Fellows, Members and students of the Academy have endeavoured to subject phenomena of the motion of functionability to the laws of science and mathematics to:

- Determine the patterns of the motion of maintainable systems through functionability states and to measure in-service functionability performance (technical and economical).*
- Understand mechanisms of the motion of maintainable systems through functionability states within the physical scale from 10^{-10} to 10^{10} metre (from atoms to solar system)*
- Define the scientific and mathematical scheme for the prediction of functionability performance and associated measures of in-service reliability, maintainability, supportability and operability for a given: maintainable system in a given in-service conditions.*

A generated body of scientific knowledge constitutes Mirce Mechanics whose axioms, formulas, methods and rules enable predictions of the emerging functionability trajectory of the future transportation, communication, navigation and many other maintainable systems to be made.

I do hope that you will realise the potentials of the Mirce Mechanics to revolutionaries the decision making among system engineers, project managers and business leaders of all technologically advanced maintainable systems, as well as a personal enjoyments of being in Devon during the month of June.

A handwritten signature in black ink, appearing to read 'J. Knezevic'.

Axiom 1: *Maintainable System begins life in positive state*

Axiom 2: *Maintainable System stays in a given state until it is compelled to change it by an imposing action.*

Axiom 3: *Imposing actions generate functionability events which are observable phenomena, resulting from physical processes or human actions.*

Axiom 4: *Functionability events are occurring with probabilistic regularity*

The Congress Programme: Wednesday 1st June 2016

0830- 0900	Registration and welcome coffee, Woodbury Park Hotel,
	SCIENCE & MATHEMATICS OF INHERENT ACTIONS
0900 -1300 Coffee Break 10.30-11.00	<p>Scientific analysis of inherent functionability actions that cause transitions of systems to the Negative Functionability State will be analysed in depth and some will be presented through case studies and illustrative examples:</p> <p>Incorrect Material, Incorrect Design, Incorrect Assembly, Incorrect Packaging, Incorrect Handling, Incorrect Storage , Incorrect Transportation, Incorrect Maintenance, Incorrect Part and many more</p>
1300 -1400	Lunch
14.00-16.30 Tea Break 15.15-15.45	<p>Mathematical representations of inherent functionability actions that cause transitions of systems to the Negative Functionability State will be analysed and presented in the forms of the following probabilistic functions: Failure Function, Durability Function, Reliability Function and Hazard Function for the Times To i^{th} Negative Functionability Event., where $i=1,2,3, \dots, n$</p>
1645-17.00	Group Photo for the History of Mirce Mechanics
17.15-18.15	<p align="center">2016 Richard F.W. Bader Memorial Lecture</p> <p align="center"><i>"What is Picotechnology? Was Richard the 1st Atomic Engineer?"</i></p> <p align="center">Preston J. MacDougall, Ph.D. Professor, Pre-Pharmacy Coordinator and Assistant Chair Department of Chemistry, Middle Tennessee State University, Murfreesboro, Tennessee, USA</p> <p>Nanotechnology is the scientific investigation of matter at the nanometer scale – roughly from one to hundreds of nanometers – and engineering systems that take advantage of the properties of matter at that scale. In other words, molecular (or supramolecular) engineering. Similarly, “femtotechnology” corresponds to the scientific investigation of matter at the femtometer scale and engineering systems that take advantage of the properties of matter at that scale. In other words, nuclear engineering. Picotechnology should therefore be defined as the scientific investigation of matter at the picometer scale – from one to hundreds of picometers - and engineering systems that take advantage of the properties of matter at that scale. In other words, atomic engineering? Yes, and this is the answer to the first titular question.</p> <p>R. F. W. Bader’s Quantum Theory of Atoms In Molecules (QTAIM) allows for the definition of well-defined, measurable, reproducible, and often transferable properties of atoms in molecules. Such data can be classified as quantum atomics, and is analogous to other –omics such as genomics, proteomics, etc... The lecture will recount experiences as a student and collaborator with Bader, and also present some of the speaker's ongoing research on sub-atomic features that are well-defined (by the topological properties of the Laplacian of the electronic charge density), measurable, reproducible, and often transferable. Such data is continuously being generated by multiple experimental and computational research groups worldwide, for atoms from most regions of the periodic</p>



Richard F.W. Bader

(15 October 1931 – 15 January 2012)

BSc (1953) and MSc (1955) from McMaster University, Ontario, Canada
 PhD (1958) from the Massachusetts Institute of Technology (MIT). in USA.
 1966-1996, a full Professor, at McMaster University.
 1980 Elected a Fellow of the Royal Society of Canada
 2010 Elected a Grand Fellow of the MIRCE Akademy, UK.

“The goal of a scientist is to uncover new ideas, concepts and tools, practical or theoretical, that extend our understanding of the world around us and enable us to do new things. In chemistry, the theory of Atoms In Molecules (AIM) developed in my laboratory, is being increasingly used by workers in all fields of chemistry and also in solid state physics. Because AIM has increased our understanding of how atoms behave, it is used in many ways - to develop new alloys and new and better drugs, for example. Nothing pleases me more than the knowledge that each year sees an ever increasing use of AIM by other scientists in the pursuit of their own research.”

Thank you Richard for being an inspiration for all of us. Dr K.

The Congress Programme: Thursday 2nd June 2016

08.30-09.00	Registration and welcome coffee, Woodbury Park Hotel
	SCIENCE & MATHEMATICS OF POTENTIAL ACTIONS
09.00-13.00	Scientific analysis of potential functionability actions that cause transitions of systems to the Negative Functionability State will be analysed in depth and some will be presented through case studies and illustrative examples:
Coffee Break 10.30-11.00	Lightening, Sand Storm, Solar radiation, Wind direction change, Foreign Object damage, No Fault Found, Puncture, Operator errors, Contamination, Volcanic Eruptions, Collisions, Shark Attack, Earthquake, Electrical Overstress, Electrostatic Discharge, Drunk Operator, Battlefield, "Wrong snow", Puncture, Frost Damage, Rodent Attack, Single Event Upset, Communication Error, Interfacial de-adhesion, and many others.
13.00-14.00	Lunch Break
14.00-17.00	Mathematical representations of potential functionability actions that cause transitions of systems to the Negative Functionability State will be analysed and presented in the forms of the following probabilistic functions: Failure Function, Durability Function, Reliability Function and Hazard Function for the Times To i^{th} Negative Functionability Event., where $i=1,2,3, \dots, n$
Coffee Break 15.15-15.45	
19.00-22.30	<p>Sherry Reception Gala Dinner – 5th Congress of Mirce Mechanics & Presentation by Tony Martin, Fellow of the MIRCE Akademy</p> <p><i>“Designing for a more sustainable future through the integration of Waste to Energy concepts and technologies”.</i></p> <p>The human race is rapidly heading towards the point where it will stifle in its own waste.....if we do not recycle or reprocess our waste, then we will destroy not only our environment but that of our children’s.</p> <p>The Industry of waste recycling and reprocessing has not enjoyed a distinguished history to date and has been plagued by the <i>failure of designs</i>, through either not working or failing to achieve production targets. All too often <i>failure</i> has been through a lack of understanding of the nature of feedstock, an over simplistic view on design or simply through bad single mindedness to the exclusion of reality.</p>

The Congress Programme: Friday 3rd June 2016

08.30-09.00	Registration and welcome coffee, Woodbury Park Hotel
	SCIENCE & MATHEMATICS OF CONTINUOUS ACTIONS
09.00-13.00	Scientific analysis of continuous functionability actions that cause transitions of systems to the Negative Functionability State will be analysed in depth and some will be presented through case studies and illustrative examples:
Coffee Break 10.30-11.00	Fatigue, Wear& Tear, Corrosion, Creep, Whiskers & Dendrites, Depolymerisation, Intermetallic Growth. Stress driven diffusion Voiding (SDDV), Electromigration, Surface Charge Spreading, Hot Electrons, Slow Trapping, Radiation Embrittlement, Charge Trapping in Oxides, and many others.
13.00-14.00	Lunch Break
14.00-17.00	Mathematical representations of continuous functionability actions that cause transitions of systems to the Negative Functionability State will be analysed and presented in the forms of the following probabilistic functions: Failure Function, Durability Function, Reliability Function and Hazard Function for the Times To i^{th} Negative Functionability Event., where $i=1,2,3, \dots, n$
Coffee Break 15.15-15.45	
16.45-17.15	Closing Remarks on the Physical and Mathematical Challenges resulting from the combined impact of several different actions on the same component or the system.

Administrative and Financial Information

For the planning purpose, of the participants, exhibitors and presenters, the following Price structure will be applied regarding all services related to the 5th World Congress of Mirce Mechanics.

Service Available	Cost		
All prices are in GB Pounds	Price	VAT	Total
Participant for 3 Days	595.00	119.00	714.00
Participant per Day	225.00	45.00	270.00
Presenter on the day of presentation	Free		
Presenter for 3 Days	300.00	60.00	360.00
Retired participants for 3 Days	195.00	39.00	234.00
University students for 3 Days	395.00	79.00	474.00
Congress Proceedings on CD	175.00	35.00	210.00
MIRCE Akademy Members	550.00	110.00	660.00
MIRCE Akademy Fellows	575.00	115.00	690.00
MIRCE Akademy Students	495.00	99.00	594.00
Partners Programme for 3 Days	195.00	39.00	234.00
Congress Dinner only Sherry, 3 course meal & wine	62.50	12.50	75.00
Exhibitors - Gold Package	6000.00	1200.00	7200.00
Exhibitors - Silver Package	3000.00	600.00	3600.00
Exhibitors - Bronze Package	1500.00	300.00	1800.00
B&B at Woodbury Park Hotel - single	Rooms are		75.00
B&B at Woodbury Park Hotel - double	guaranteed		95.00

VALUE ADDED TAX (VAT):

Unless special exemption exists, under UK Customs and Excise regulations delegates from all countries are required to pay UK VAT @ 20% on all courses taking place in the UK. Non-UK delegates may be able to recover VAT incurred via the relevant tax authority in the country of origin of the delegate.

Terms and Conditions

Substitution of participants may be made at any time. If you intend to do this, please advise the MIRCE Akademy ('the organiser') as soon as possible. Cancellation of a booking must be received in writing by the organiser at least 14 days before the commencement of the Congress. The MIRCE Akademy regrets that no refunds or credits will be made after the deadline unless the organiser cancels the Congress. The organiser reserves the right to alter the programme or cancel the Congress at its discretion. All places offered are subject to availability.

For any other information please contact us:

Phone; + 44 (0)1395 233 856,
Email; quest@mirceakademy.com
Website; www.mirceakademy.com



About the Venue

Woodbury Park is a magnificent 500 acre complex set among rolling hills above the South West English coastline, only a few miles from Exeter.

Communication between Exeter and other parts of the United Kingdom are excellent. **By road**, the M5 motorway links Exeter to London, the Midlands, Scotland and Wales. Regular rapid coaches run services to and from London and Heathrow Airport. **By rail**, a regular fast service is available to and from Exeter (St David's Station) and London (Paddington Station). **By air**, Exeter Airport offers regular flights to many British and Continental destinations and is situated near to Woodbury Park.

Travel between Exeter and Woodbury normally requires a car or taxi.

Among the outstanding leisure facilities at Woodbury Park are two golf courses including the magnificent **Oaks Championship course**, tennis courts, a swimming pool, spa, sauna and fully equipped gymnasium and well appointed lounge areas and bars.

Woodbury Park, Exeter, EX5 1JJ, UK

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 +44 (0) 1395 233 384

 enquiries@woodburypark.co.uk

 www.woodburypark.co.uk

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Exeter is the most southwesterly Roman fortified settlement in Britain. Exeter Cathedral was founded in the early 12th century and has several notable features, including an early set of misericord, an astronomical clock and the longest uninterrupted vaulted ceiling in England. **Today**, Exeter is identified as one of the top ten most profitable locations for a business to be based.



Woodbury Park Hotel & Golf Club, Exeter, EX5 1JJ, UK – home of the MIRCE Akademy

5th World Congress of Mirce Mechanics 1 – 3 June 2016

BOOKING FORM

Email: quest@mirceakademy.com

Phone: +44 (0) 1395 233 856

Mail: MIRCE Akademy, Woodbury Park, Woodbury, Exeter, EX5 1JJ, United Kingdom

Web site: www.mirceakademy.com

THIS FORM MAY BE COPIED

Please select appropriate level of service and corresponding fee.

Group discounts are available please contact us.

The Symposium Fees includes:

- Attendance
- Congress Papers and Supporting Materials
- Lunches and Light Refreshments
- Gala Dinner on 2nd June
- Richard Bader Memorial Lecture
- Fish & Chips Event on 1st June

Value Added Tax (VAT)

Unless special exemption exists, under UK Customs and Excise regulations delegates from all countries are required to pay UK VAT @ 20 % on all courses taking place in the UK. Non-UK delegates may be able to recover VAT incurred via the relevant tax authority in the country of origin of the delegate.

PERSONAL DETAILS (Please print clearly)

Surname _____

First name _____

Organisation _____

Department _____

Position _____

Address _____

Postcode _____ Country _____

Tel _____ Fax _____

E-mail _____

Special requirements Yes No

Please specify

I understand and accept the registration terms and conditions as shown

Signature _____ Date _____

PAYMENT DETAILS

Please invoice my organisation (**Note: UK MOD personnel can pay by BACS through the DBA – Contractor Number will be supplied with invoice**)

For the attention of _____

Purchase Order No. _____

Please Charge credit card £ _____

Visa MasterCard Amex

Cardholder _____

Card No. _____

Expiry Date _____ Security Number _____

Signature _____

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The organiser reserves the right to alter the programme or cancel the Summer School at its discretion. All places offered are subject to availability.