# ISA Ireland Section 2013 Honours and Awards





University College Cork Wednesday 11 December 2013

> e-mail: <u>info@isa.ie</u> <u>http://www.isa.ie</u>

#### About ISA Worldwide

ISA – The Instrumentation, Systems, and Automation Society has 30,000 members in 95 countries. The ISA is a global, nonprofit, educational organisation connecting people and ideas in automation and control. The Society fosters advancement in the theory, design, manufacture and use of sensors, instruments, computers and systems for automation and control in a wide variety of applications. In addition to hosting the largest conferences and exhibitions for automation and control. ISA is a leading technical training organisation and a respected publisher of books and standards.

ISA also serves the professional development and certification needs of industry professionals and practitioners with its Certified Automation Professional (CAP), Certified Control Systems Technician® (CCST®), Certified Industrial Maintenance Mechanics (CIMM) programs and the Control Systems Engineers (CSE) license.

Born as the Instrument Society of America in 1945, in Pittsburgh, Pennsylvania, USA. The society grew out of the desire of 18 local instrument societies to form a national organization. Membership grew from 900 in 1946 to 6,900 in 1953 to 30,000 in 2004.

Recognising ISA's international reach and the fact that its technical scope had grown beyond instruments, in 2000, the ISA Council approved a legal name change to ISA -The Instrumentation, Systems and Automation Society. Today worldwide, ISA consists of 174 regular sections and 179 student sections.

#### **Today's Mission:**

Maximize the effectiveness of ISA members and other practitioners and organizations worldwide to advance and apply the science, technology, and allied arts of instrumentation, systems, and automation in all industries and applications. Identify and promote emerging technologies and applications. Develop and deliver a wide variety of high-value information products and services to the global community.



#### **ISA Ireland Section**

The Ireland Section, which is voluntary with a membership of over 180, received its charter in 1978. Its purpose is to bring together all personnel involved in the instrumentation and related disciplines in order to enhance their capabilities in instrumentation design, manufacture and use.

The sections calendar of events, for the coming year will see:

- Two Seminars and Three Technical Talks
- Plant Tours
- Annual Honours & Awards ceremony
- Annual Golf Outing.

#### Lord Mayor of Cork Councillor Catherine Clancy

I am delighted to be present here tonight to present the awards in this historical centre of education dating back to 1845. This occasion is intended to acknowledge and encourage excellence and achievement amongst those involved in, and those training for careers in automation, instrumentation and related areas of technology.

When people involved in such diverse areas of technology achieve excellence and in the process produce quality work, it is only right that we should publicly acknowledge such success.

I would like to wish the winners, their families, sponsors, and all present, a Joyful and Peaceful Christmas as we approach the season's festivities.



#### ISA Ireland President Mr. Liam O'Brien

I would like to welcome you all here this evening, to our 32nd annual Honours and Awards Ceremony. We hold this annual ceremony to acknowledge and encourage excellence for those training for careers in Instrumentation, Systems and Automation.

This year we have six awards, three of which have been submitted by Third Level institutions and three industry awards. I would like to welcome the recipients and their families

We are delighted each sponsor is represented here this evening, this clearly shows the industry's awareness and support for promoting and awarding excellence.

I would like to thank University College Cork for allowing use this very elegant and historic Common Room. I hope you all have a very relaxed and enjoyable evening as we celebrate excellence in our industry. I would like to wish you and your families a joyful Christmas and a prosperous new year.



# **Degree Award**

#### Criteria:

To be awarded, on any nomination, to the best final year Degree student specializing in any area of Instrumentation and Control.

#### **Recipient:**

Mr. Brian Hogan Cork Institute of Technology, Cork.

#### Nominated by:

Mr. Harvey Makin Lecturer at Cork Institute of Technology.



Brian Hogan has been a student at CIT for the past 3 years and is currently in the 4<sup>th</sup> year of the Honours Degree in Instrument Engineering. (formally Applied Physics and Instrumentation). Brian completed the BSc (Ord) last year and was conferred in October with his degree. Brian had the highest average mark in his class (over 80%) and graduated with Distinction.

Brian has been consistently ranked top of his year over the three years to date. His work, both practically and theoretically, is excellent. He is also a natural leader of the class and acts as the class rep. on many occasions.

In Year 3 Brian gained a placement with Rockwell Automation his supervisor was Mr. Brendan Kelly and his CIT supervisor was myself. Brian's resulting report and presentation were of the highest quality and content. His placement involved a number of tasks but in particular the development and review of documentation. The development of PLC code and SCADA graphics and the application of the S88 standard to the document design process. Note that placements in third year are not project based they are in industry to become aware of how industry and companies operate in practice.

They are also made aware of safety protocols and assessed on their ability to work as part of a team and/or work on one's own initiative. Brian was highly praised for his placement by both Rockwell and the Department staff who attended his presentation. Brian has now been invited back to Rockwell to complete a project as part of his final year. I would recommend Brian for this award without reservation.

## Setting the Standard for Automation\*\*

# Honour's Degree Award

#### Criteria:

To be awarded, on any nomination, to the best final year Degree student specializing in any area of Instrumentation and Control.

**Recipient:** Mr. Eric Higgins Cork Institute of Technology, Cork.

**Nominated by:** Mr. Harvey Makin Lecturer at Cork Institute of Technology .



Eric Higgins has been a first class student throughout his 4 years at CIT. Eric has been consistently top of the class rankings. Eric's final year average mark was in the mid-eighties and was the best in the class. He was conferred with a 1<sup>st</sup> Class Honours Degree in October 2013. Eric also had the highest mark for a 4<sup>th</sup> year project with a mark over 90%.

Eric has a particular affinity with Automation and Control and has demonstrated this on many occasions. He is now employed in this area as his chosen profession. In Eric's third year he was placed with Pfizer Pharmaceuticals Ireland, Little Island for 6 months. His industry supervisor, Noel Ronayne, was most enthusiastic in his praise of Eric's contribution during this placement. I was Eric's CIT supervisor and visited him on site during his placement. Throughout his placement I received excellent reports on his work and his ability to work independently when required. Eric's report on his placement and his oral presentation were both equally outstanding and all the staff present were in agreement.

In his 4<sup>th</sup> year Eric sought and gained a project with Pfizer Pharmaceuticals Ireland, Little Island. Noel Ronayne and I were his supervisors during his project.

This project consisted of converting the control systems of a Low Temperature Chemical Reactor from the current Texas Instruments 555 and Siemens S7-300 Programmable Logic Controllers to the plant wide DeltaV Distributed Control System. Various aspects were examined such as Project Justification, Functionality requirements and Evaluation of various conversion solutions. A final solution was agreed with Pfizer personnel and the report details its implementation.

Mr. Willie Power, Pfizer, is an external examiner for our course and he was also high in praise of both Eric's theoretical and practical abilities.

I do not hesitate in putting Eric forward for this award. Outstanding is not a word that I use too often but I do in this case.

## **Post Graduate Award**

#### Criteria:

To be awarded, on the nomination of any third-level institution, to the best Post Graduate student awarded PhD / Bsc in Instrumentation / Applied Physics in Ireland.

#### **Recipient:**

Dr. Nicola Pavarelli Cork Institute of Technology, Cork.

#### Nominated by:

Dr. Guillaume Huyet Head of Dept. Applied Physics and Instrumentation at Cork Institute of Technology.



Context of thesis: In the history of photonic devices, generational advances have been as a result of new growth techniques giving increased carrier and photon control. The development of the double-heterostructure (Nobel Prize in Physics 2000) gave spatial carrier control, while the later development of quantum-well devices gave control of a single carrier momentum direction and each led in turn to orders of magnitude improvement in device performance. Future photonic devices will be constructed from an increasing palette of material geometries, from quantum dot (QD) materials, where nanostructures give carrier momentum control in all three spatial dimensions, to mixed confinement structures where highly-localised and delocalised charge carriers undergo complex interactions.

Regrettably, the present understanding of these photon-carrier systems has lagged the ability to create them. The causes of this lag lie in the mixed scales of the systems: the system relaxation times combine femtosecond with nanosecond characteristic times; the spatial dimensions combine tens of nanometres quantum-confined structures with hundreds of microns device dimensions. In short, the theoretical treatment of the emerging systems has suffered from lack of experimental guidance.

Contribution of researcher: It is in this context that Dr Pavarelli made his vital contribution. Using advanced characterization techniques, Dr Pavarelli undertook a comprehensive set of measurements on the carrier and photon dynamics of mixed confinement semiconductors. The sample set studied consisted of a set of semiconductor wafer growths with the confinement mechanisms tuned via the chemical composition. This continuous deformation of the confinement potentials allowed the emergence of a new balance of phenomena such as Coulomb confinement, Pauli blocking and electrostatic repulsion.

The principal tool utilised by Dr Pavarelli was time-resolved photo-luminescence, where a femtosecond optical pulse excites the sample, and a streak camera records the light emission with a temporal resolution of some picoseconds. The cascade of excited carriers from energy state to energy state can thus be mapped in the time recording of the light emission. Dr. Pavarelli combined these measurements with detailed balance numerical

simulations, generating excellent alignment between the experimental results and his numerical models of the system.

This contribution has been highly recognized in the peer-reviewed literature system, with many conference talks presented, 8 journal publications, including one to the highly prestigious Physical Review Letters. In this Letter, Dr Pavarelli collaborated with researchers at Stanford University on the direct emission of light from Germanium, a long-standing target of semiconductor researchers attempting to align production methods with the mature CMOS industry.

I would recommend this student highly for this award.

### ISA IRELAND SECTION 2013 HONOURS AND AWARDS SPONSORS



















# **Instrument Pioneer Award**

#### Criteria:

To be awarded, on the nomination of two or more Society members, in recognition of a lifetime devoted to instrumentation in Ireland.

#### **Recipient:**

Dr. Liam Mc Donnell CPhys FInstP Lecturer Cork Institute of Technology (Retired)

#### Nominated by:

Mr. Bob Shine (FAS - Retired) Mr. Brian Curtis (DPS Engineering)



Dr Liam McDonnell has over forty years experience in instrumentation education, research and enterprise. He retired in August 2013 from Cork Institute of Technology after 37 years as a Lecturer, Senior Lecturer and more recently as Head of the Department of Applied Physics and Instrumentation.

Over the period the Department of Applied Physics and Instrumentation has developed instrumentation education opportunities from Higher Certificate to PhD for full-time and part-time students. Dr McDonnell's specialist teaching and research have centred on instrument system design and nanotechnology instrumentation. He has supervised postgraduate research students at MSc and PhD levels and acted as an external examiner at undergraduate and postgraduate levels in colleges and universities within Ireland, France and England. He was a founding member of ISA Ireland and served in a number of committee positions for several years, including two periods as Section President, and received ISA's Distinguished Society Service Award.

Dr McDonnell has published and presented widely in peer-reviewed journals and international conferences. He is an inventor of two European and US patents and has been the principal investigator on many national and European Commission funded research projects. He has served as an expert evaluator for many European Commission research programmes and as a reviewer for several international scientific journals. He was elected a Fellow of the Institute of Physics for his services to the physics community and has been a visiting physicist at the University of Paris and the Brookhaven National Laboratory in New York.

He co-founded and managed Tekscan Limited, a campus company that developed novel instrumentation for research and also the Centre for Surface and Interface Analysis that provided instrumentation based research and analytical services to industry.

# **Innovation Project Award**

#### Criteria:

To be awarded to any person or group in recognition of a new invention or application, significant achievement in contributing to instrumentation, automation, measurement and control technology within Ireland.

#### **Recipient:**

Janssen Biologics Autoclosure Team

#### Nominated by:

Ms. Paula O' Driscoll Janssen Biologics Ringaskiddy, Co. Cork.



Janssen Autoclosure Team (L-R) – Paula O' Driscoll, Stephen O'Connell, Mary O'Driscoll, Ronan Curtis, Rebecca Cronin.

Implementing a MES project is difficult, and many companies undertake this journey. However few companies have done as much integration as Janssen Biologics, and this has allowed them to enable the Auto Closure functionality within MES. This allows Batch Records to be automatically closed by the system, if they meet certain criteria (all exceptions closed, no critical processing parameters, no critical exceptions, batch was not aborted).

Therefore the system acts as a batch reviewer, rather than the traditional operations and quality personnel. This allows personnel to spend their time on more valued added work, and thereby is headcount avoidance.

This leap of faith in allowing a system to release batches, rather than a manual check, was made possible by a Team of Janssen people from a cross function of departments (Operations, Quality, Manufacturing Systems). The work involved in the go-live included a full end-to-end process and systems risk assessment, remediating risks, and changes in business processes.

A benchmarking exercise was conducted on this initiative among the MES PAS-X community and it was identified that Janssen Biologics were the first to enable this.

Since the MES Auto Closure was turned on, 98% of eligible batch records have been closed automatically, equating to 1 FTE reduction.

## **ISA IRELAND SECTION CORPORATE SPONSORS**











INSTRUMENT & WEIGHING SPECIALISTS











## **ISA IRELAND SECTION PRESIDENTS**

Year	Name
1977 / 1979	Mr. Fred Gilroy
1979 / 1980	Dr. Liam McDonnell
1980 / 1981	Mr. Maurice Radford
1981 / 1983	Mr. John Power
1983 / 1984	Mr. Malachy Hanley
1984 / 1985	Mr. Eoin O'Riain
1985 / 1986	Mr. Harvey Makin
1986 / 1987	Mr. Frank Maher
1987 / 1988	Mr. Brendan Barry
1988 / 1989	Dr. Liam McDonnell
1989/ 1990	Mr. Fred Gilroy
1990 / 1991	Dr. Eamon Cashell
1991 / 1992	Mr. Ger Dullea.
1992 / 1994	Mr. John Lotty
1994 / 1995	Mr. Robert Shine
1995 / 1996	Mr. John Farrell
1996 / 1997	Mr. Aidan Howard
1997 /1998	Mr. Billy Walsh
1998 / 1999	Mr. Declan Lordan
1999 / 2000	Mr. Brian Curtis
2000 / 2001	Mr. Eamon Creech
2001 / 2002	Mr. Tony Mahon
2002 / 2003	Mr. Alan Edwards
2003 / 2004	Mr. Peadar Walsh
2004 / 2005	Mr. Martin Almond
2005 / 2006	Mr. Kevin Dignam
2006 / 2007	Mr. Brian Nolan
2007 / 2008	Mr. Jim Long
2008 / 2009	Mr. Michael Meade
2009 / 2010	Mr. Kevin McCarthy
2010 / 2011	Mr. David O' Brien
2011 / 2012	Mr. John Downey
2012 / 2013	Mr. Kieran Coughlan
2013 / 2014	Mr. Liam O'Brien

#### Honours & Awards 2013 Program of Events

18:00 Arrival of Lord Mayor Councillor Catherine Clancy.
18:10 Past President Mr David O'Brien will begin proceedings.
18:15 Formal opening by Lord Mayor Councillor Catherine Clancy.
18:20 Response from the President of ISA Ireland Section Mr. Liam O'Brien.
18:25 Presentation of Awards.

Degree Award
Honours Degree Award
Post Graduate Award
Pioneer Award
Innovation Project Award

Mr. Brian Hogan, Cork Institute of Technology Mr. Eric Higgins, Cork Institute of Technology Dr. Nicola Pavarelli, Cork Institute of Technology Dr. Liam Mc Donnell, Cork Institute of Technology (Retired) Janssen Biologics Autoclosure Team, Jansen Biologics

18:55 Response from the Winner of Pioneer Award, Dr. Liam Mc Donnell.

19:00 Response from the Innovative Project Award Representative, Ms. Rebecca Cronin.

19:01 Photographs of Award winners with the Lord Mayor.

**19:15** Photographs of Sponsors with the Lord Mayor.

19:30 Reception.

20:30 Close of Honours and Awards Reception.

The Ireland section of ISA has conducted an annual Honours & Awards programme since 1980. This programme is intended to acknowledge and encourage excellence amongst those involved in, and those training for careers in Automation, Instrumentation and related areas of technology.



Without the continued support of our sponsors this annual event could not take place:

<b>DPS Engineering</b>	<b>Douglas Control &amp; Automation</b>	PM
Janssen Pharmaceuticals	<b>O'Sheas Electrical</b>	RPS
Valve Services		PACIV

The education centres: To the time and effort of the lecturers and students for submitting nominations.

Cork Institute of Technology	Institute of Technology Carlow,
Dublin City University	Institute of Technology Talaght
Galway Mayo Institute of Technology	Institute of Technology Tralee
Trinity College Dublin	University College Dublin
University College Galway	Waterford Institute of Technology