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## SEMINAR SERIES

**Seminar 1 Tuesday 7th September 14:00 - 17:00**  
**Oxygen and Water Vapour Permeability of Polymers for Medical Devices and Packaging**  
**Andy Hazelwood - Systech Instruments Ltd, UK**

The workshop will focus on the available technologies and equipment for permeation measurement. The focus will be oxygen and water vapour; other gas permeability will be covered to a lesser extent. Demonstration of typical permeation analysis equipment including understanding how the instrument works and factors that can affect the results of testing. Alternative sample testing will be demonstrated. Other areas will be discussed including international testing standards and the history and science behind permeation measurement.

**Seminar 2 Tuesday 7th September 14:00 - 17:00**  
**A New Approach to Controlling the Quality of Thermoplastics for Medical Device Production using an indentiPol**  
**Glynn Van-de-Velde - Triton Technology Ltd, UK**

The indentiPol is a revolutionary new device for checking that a desired quality of material is maintained in a production environment. The device assesses the thermal and mechanical properties from the solid state through to the melt or softening temperatures of the material by comparing thermo-mechanical 'spectra' very rapidly and scoring the fresh material against a reference set of representative material evaluations. In addition, 'key' parameters such as a glass transition temperature or a melt temperature can be outputted into appropriate isobaric control charts. A brief synopsis of this all new approach will be outlined, followed by a practical demonstration of the use of the indentiPol with a typical application. As an example, a training set of a PBT used for a filter device will be challenged with an alternative grade and with regular grade material. The device will be present for the duration of the conference, so those who want to bring along their own materials can do so and appropriate testing can be demonstrated over the period of the meeting.

**Seminar 3 Tuesday 7th September 14:00 - 17:00**  
**Laser Transmission Welding of Plastics - From Trial to the Serials Process**  
**Holger Aldebert - LPKF Laser & Electronics AG, Germany**

Background information on laser welding and how it is used in medical device industry  
Laser transmission welding  
Process in general - Parameters, Materials, Colours,  
Process variants - Advantages, Design guidelines  
Process control - Travel collapse, Pyrometer, Reflexion diagnostics, Burning, detection, Machine concepts  
Examples

**Seminar 4 Wednesday 8th September 09:00 - 12:00**  
**Medical Device Injection Moulding Workshop**  
**Steve O'Leary - First Polymer Training, Ireland**

The workshop will start with an overview of how to analyze a moulding process, leading into a troubleshooting overview; understanding pressure curves, where useful process data can be gathered, and looking at troubleshooting in terms of melt temperature, fill speed and melt pressure. This will be followed by a discussion on using the designed experiments technique to build a consistent process as part of the validation procedure - what moulding settings should be included in the DOE and common errors made, what parameters to include in the main validation (and why), and what settings/data be recorded on production set-up sheets in a best practice production facility.

**Seminar 5 Wednesday 8th September 09:00 - 12:00**  
**Compuplast VEL Flow Simulation**  
**Don Fleming - Fleming PTC, UK**

An introduction to the Compuplast VEL6 suite of flow simulation programs. Introduction to the general purpose 2DFEM finite element program. How to setup a project within 2DFEM. How to input material data (capillary, thermal analysis (DSC/thermal conductivity/Cp...)). How to convert your flow geometry into the required nodes and boundaries the program requires. Manual input and importing DXF files. Setting up boundary conditions. Solving for the materials and process conditions. Changing the process conditions (flow rate, temperature, polymer) and assessing the implications. Introduction to the other programs such as Spiral die, Extruder, Cooling, Profile Die, Flat Die and 3DFEM and how all can be used in medical extrusion.

**Seminar 6 Wednesday 8th September 09:00 - 12:00**  
**Compounding of Medical Polymers**  
**Paul Anderson - Coperion**

Background to Polymer Compounding  
Technology Options  
Co-rotating Twin-screw Compounding Basics  
Issues specific to Medical Plastics  
Examples of Medical Plastics Compounding Lines  
Summary

**Seminar 7 Wednesday 8th September 09:00 - 12:00**  
**An Introduction to the Basics of Process Validation**  
**Vinny Sastri - Winovia LLC, Albany, New York, USA**

The Global Harmonization Task Force's new guidance document on "the Controls of Products and Services Obtained from Suppliers" was published in December 2008. It details the requirements and the expectations that manufacturers must meet to exert more control over their suppliers. Besides quality agreements and supplier audits, one of the requirements might be that suppliers must validate processes for those supplied raw material, parts or components that are deemed critical to the final, finished device. This presentation will provide an overview of process validation, the three qualification steps included in process validation and outputs from the validated process including process controls. The concept of validation life cycle management will also be discussed.

- Overview and intent of Quality System
- Regulations for Medical Devices
- Supplier controls and how they affect suppliers
- Process validation overview
- Verification versus validation
- Links to design and risk
- Installation Qualification
- Operational Qualification
- Performance Qualification
- Process Controls
- Process Validation Life Cycle

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Society of Plastics Engineers  
EUROPEAN MEDICAL POLYMERS DIVISION



## European Medical Polymers Conference 2010

Queens University Belfast,  
Ashby Building, Stranmillis Road  
Belfast, BT9 5AH

7th - 9th September 2010

Polymer Processing and Medical Polymer Research Centres



Society of Plastics Engineers  
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## KEYNOTE SPEAKERS 2-5PM WEDNESDAY 8TH SEPTEMBER 2010

SESSION 1: SPECIALTY BIOPOLYMERS, ANTI-MICROBIAL AND BIOMEDICAL POLYMERS FOR THE MEDICAL DEVICE INDUSTRY			
14.00	The Society of Plastics Engineers - Shaping the Future of Plastics Across the Globe	Len Czuba	President, Czuba Enterprises, IL, USA and SPE President (2005-06)
14.30	Polymers for Drug Delivery from Coronary Stents: Clinical Implications and Future Directions	Dr. Ian B.A. Menown	Craigavon Cardiac Centre, NI
15.00	Engineering Pharmaceutical Solutions using Extrusion Technologies	David Jones	School of Pharmacy, QUB
15.30	An Overview of Research in Medical Devices and Biopolymers – Innovation, Capabilities and Industrial Collaboration	Steve McCarthy	Prof. and Director of the Massachusetts Medical Device Development Center, Lowell, MA, USA
16.00	A Sector Overview of Medical Devices in Ireland	Sharon Higgins	Director, Irish Medical Device Association, Ireland
16.30	Medical Devices in Connected Health	Peter Donnelly	Chief Executive, Bio Business NI, Belfast, Northern Ireland, UK
17.00	REACH Update	David Howard	SPE / NCC

## 2010 TECHNICAL SESSIONS TIMETABLES THURSDAY SEPTEMBER 9TH 2010

SESSION 1: SPECIALTY BIOPOLYMERS, ANTI-MICROBIAL AND BIOMEDICAL POLYMERS FOR THE MEDICAL DEVICE INDUSTRY			
9.00	Mechanical, Thermal, Morphological properties of Bio-Degradable Poly(l-lactic acid)/Polyhydroxybutyrate blends	Trevor Woods	Polymer Research Centre, School of Physics, Trinity College, Dublin, Ireland
9.30	Mechanical and Visco-elastic Properties of UHMWPE for in-vivo Applications	Brian Croop	DatapointLabs, Ithaca, NY, USA
10.00	Application of lactide based polymers in resorbable implant devices	Robert vanTuijl	Purac Biomaterials, Gorinchem, The Netherlands
11.00	Preparation And Property Testing Of Organoclay/Polysiloxane Nanocomposites For Maxillofacial Prostheses	Petroula Tarantili	Polymer Technology Lab, School of Chemical Engineering, National Technical University of Athens, Greece
11.30	Porous scaffolds of polycaprolactone with hydroxyapatite fibers	Guinea Cardoso	Department of Materials Engineering, Faculty of Mechanical Engineering, State University of Campinas, São Paulo, Brazil
12.00	Mumio based Novel Medicated Polymeric Gel for Rheumatoid Arthritis	Oyunchimeg Zandraa	University Innovation Center, Tomas Bata University in Zlín, Zlín, Czech Republic
12.30	Elastomer Thermoplastic Behavior Of A Biodegradable Poly (Lactide-Caprolactone) Multiblock Copolymer	Jose Ramon Sarasua	University of the Basque Country, Department of Mining-Metallurgy and Materials Science, School of Engineering, Bilbao, Spain

LUNCH			
14.00	Novel silver-based antimicrobial materials used in indwelling medical devices	Andreas Spiegelberg	Spiegelberg (GmbH & Co.) KG, Hamburg, Germany
14.30	Effects of Antimicrobial Agents on the Properties of Hydrogel Dressings	Nabanita Saha	Polymer Centre, Faculty of Technology, Tomas Bata University in Zlín, Zlín, Czech Republic
15.00	Carbon based nanomaterials suitable for detection of bacteria and biofilms on the surface of medical implants	Edward Moore	Polymer Research Centre, School of Physics, Trinity College, Dublin, Ireland
16.00	Orthopedic Implant Materials of DSM Biomedical BV	Jac Koenen	DSM Biomedical. Koestraat 1 - 6167 RA Geleen, The Netherlands
16.30	A Novel BioRespirator Mask for Use in BioHazardous Environments to Protect the Wearer While also Filtering Contaminants from the Exhalant	Len Czuba	Czuba Enterprises, Chicago, IL, USA

SESSION 2: NOVEL POLYMERS FOR MEDICAL DEVICES, PROCESSING & PACKAGING			
9.00	A Methodology for Research into Enactments of Plastics in the Medical Context	Susan Lambert	Museum of Design in Plastics, The Arts University College at Bournemouth, UK
9.30	To Validate or Not to Validate? That is the Question for Plastics Processors in the Medical Device Industry	Vinny Sastri	Winovia LLC, Albany, New York, USA
10.00	Medical Grade Thermoplastic Polyurethanes: Elastomers to Engineered Plastics	Anthony Walder	Lubrizol Advanced Materials, Wilmington, MA, USA
11.00	Polyamide 11 and PEBA Materials for medical applications	Benoit Andre	Arkema, Cerdato, France
11.30	TPE Compounds - A Viable Alternative to PVC in Medical Tubing Applications?	Barry Galpin	Teknor Apex Company, Pawtucket, RI, USA
12.00	"OXPEKK – A Polyketone System, Stiff or Flexible - As Required"	Tony DeCarmine	Oxford Performance Materials, Enfield, CT, USA
12.30	DSM Medical Coatings via UV curing technology: powerful tools in device design	Jens Thies	DSM Biomedical Koestraat 1 - 6167 RA Geleen, The Netherlands

LUNCH			
14.00	Trends in Polymer Materials For the Medical Industry and a Review of Eastman Tritan Copolyester	Emmett O'Brien	Eastman Chemical Company, Kingsport, Tennessee USA
14.30	Microextrusion as a way to challenge the future	Simone MacCagnan	Gimac Microextruders, Roma, Castronno (VA), Italy
15.30	Influence Of Processing Conditions And Polymer Characteristics On Surface Topography Of Small Bore Tubes For Medical Device Applications	Lledo Peris	Valpar Industrial Ltd, Bangor, Northern Ireland, UK
16.00	Assessing the Properties and Characteristics of Polymers used in Healthcare Packaging	Febe Kusmanto	Perfecseal, Londonderry, Northern Ireland, UK

POSTER SESSIONS		
Polydioxanone Biodegradable Stent	Barbora Sedmikova	ELLA-CS, Hradec Kralove, Czech Republic
Determining the Effects of Gamma Sterilisation on Medical Grade Plasticised PVC	Silvia Esteban	Colorite-Europe Ltd, Belfast, Northern Ireland, UK
A Study of Structure-Property relationships of TPE tubing for Medical Device Applications	Chris Small / Lee McCauley	Colorite-Europe Ltd, Belfast, Northern Ireland, UK
An Investigation of Structure-Property relationships in Thermoplastic Elastomers for Medical Pump Tubing	Chris Small / Rohit Kale	Colorite-Europe Ltd, Belfast, Northern Ireland, UK
Feasibility of Developing a Microbicide-Releasing SILCS Diaphragm	Ian Major	School of Pharmacy, Queen's University Belfast, Northern Ireland, UK
Manufacture and Stability Evaluation of Microbicide-Loaded Silicone Elastomer Vaginal Rings	Peter Boyd	School of Pharmacy, Queen's University Belfast, Northern Ireland, UK
An In Vitro model of Blood Vessels for Cardio-Vascular Applications	Austin Coffey	Waterford Institute of Technology, Waterford, Ireland
Regulatory Driven Top-Down System Architecture Design For Low-Cost Microelectronic Based Wireless Enabled Implantable Diagnostic Devices	Philip Walsh	Waterford Institute of Technology, Waterford, Ireland
Intravaginal Rings: Manufacture and Applications in Controlled Release	Peter Boyd	School of Pharmacy, Queen's University of Belfast, Belfast, UK
Blends of poly (ethylene-glycol)-dimethacrylate and poly (ethylene oxide) and evaluation of the miscibility	Danielle Feliciano	Department of Materials Engineering, Faculty of Mechanical Engineering, State University of Campinas, São Paulo, Brazil
Dual Functional Ionic Liquids AS plasticizers and antimicrobial agents in medical polymers	S.Y. Choi	School of Mechanical & Aerospace Engineering, Queen's University Belfast, Northern Ireland, UK

Please note that the Technical Session timetable may be subject to minor changes.

# HOTEL DETAILS



## Wellington Park Hotel

21 Malone Road, Belfast,  
BT9 6RU, Northern Ireland  
Tel: +44(0)28 9038 1111  
Fax: +44(0)28 9066 5410

Web: [www.wellingtonparkhotel.com](http://www.wellingtonparkhotel.com)  
Email: [res@wellingtonparkhotel.com](mailto:res@wellingtonparkhotel.com)

Special rates have been negotiated with The Wellington Park Hotel – Please quote Reference Code: WQUB7910 when booking accommodation at the email address above.

*Belfast is well served with an excellent range of hotel accommodation. Further extensive options can be found by using the following sites:*

[www.gotobelfast.com](http://www.gotobelfast.com) / [www.discovernorthernireland.com](http://www.discovernorthernireland.com)

*The following hotels are close to the University;*

### The Europa Hotel\*\*\*\*

Great Victoria Street, Belfast BT2 7AP

Tel: +44 (0) 28 9027 1066

Web: [www.hastingshotels.com/europa/index.htm](http://www.hastingshotels.com/europa/index.htm)

### Malone Lodge Hotel & Apartments\*\*\*\*

60 Eglantine Avenue, Malone Road, Belfast BT9 6DY

Tel: +44 (0) 28 9038 8060

Web: [www.malonelodgehotelbelfast.com](http://www.malonelodgehotelbelfast.com)

# TRAVEL /AIRPORTS:

Belfast is served by two airports – George Best City Airport with many UK links via Fly Be / bmi / Ryanair / Easyjet.

Belfast International Airport is approx 30 minutes from Belfast, and is served by Aer Lingus / bmi baby / Continental Airlines / Easyjet / Jet 2.

Dublin Airport is also an option with an express coach link to Belfast City centre every hour, and direct rail link from Dublin city centre. Travel to Belfast is two hours. Dublin Airport is served by Air France / BA / Aer Lingus / Ryanair / Malev / Emirates / Lufthansa / Swissair / Luxair / BMI / Aer Arann / FlyBe.

# ACCEPTANCE FORM

*I wish to book the conference*

I will attend the “Welcome Reception” on the 7th September 2010 at 7.00pm at the Wellington Park Hotel.

I will attend the “Conference Dinner” and Celtic Evening in the Wellington Park Hotel on the 8th of September 2010.

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## FEES

Included in the registration you will find a bound copy of the Conference Proceedings, Welcome Reception, Lunches & Refreshments for both days and the Reception Dinner.

Advanced registration fees, valid until 24th August 2010.

€275 for SPE / IOM Members

€350 for non SPE Members (incl 1 year SPE membership)  
Extra surcharge of €100 will apply after 24th August 2010.

Speakers fee is €100

Students fee is €100  
incl Welcome Reception and Conference Lunches  
Dinner Attendance is an additional €25