SPE Medical Plastics MiniTec 2013

Technology Advances in Plastic Materials and Processing for Medical Devices

Gurnee, Illinois, USA
9 September 2013

### Morning Session on New Materials

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<th>Title</th>
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<td>High Performance Polymers</td>
<td>Ryan Roeder – University of Notre Dame</td>
<td>Ryan K. Roeder received B.S. and Ph.D. degrees in Materials Engineering from Purdue University in 1994 and 1999, respectively. After Purdue, Ryan completed a two year post-doctoral research appointment in the Department of Orthopaedic Surgery at the Indiana University Medical Center. Ryan has been a faculty member in the Department of Aerospace and Mechanical Engineering and Bioengineering Graduate Program at the University of Notre Dame since 2001. He teaches courses on biomaterials, failure of materials, mechanical behavior of materials, manufacturing processes for materials and solid mechanics. His research is broadly centered on structure-function relationships in synthetic biomaterials, including PEEK, and biological tissues. His research activities have been supported by the National Institutes of Health, the U.S. Army Peer-Reviewed Medical Research Program, the National Science Foundation, the Centers for Disease Control and Prevention, the Indiana 21st Century Fund, and private corporations. He has published over 50 peer-reviewed papers and 3 patents.</td>
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<td>Silicone Biomaterial Applications: Past, Present and Future</td>
<td>Alexis Proper – PolyOne Corporation</td>
<td>Alexis Proper graduated from Michigan State University with a degree in Mechanical Engineering. When working at Dow Corning, Alexis had multiple roles in application engineering and sales supporting medical industries including pharmaceutical manufacturing, medical devices, topical products and wound care. In her current role at PolyOne, Alexis is in a Business Development role providing technical support for customers using silicone and polyisoprene within the medical device market.</td>
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Title: Specialty Polymer Solutions for a Changing Healthcare Landscape
Presenter: Dane Waund – Solvay Specialty Polymers

Dane Waund is a part of Solvay Specialty Polymers’ Healthcare Team, serving as Global Sales Development Manager since April 2013. He has over twenty years of international experience with specialty polymers, previously working for EMS, including a four-year assignment living in Switzerland. Trained as a Mechanical Engineer at the University of Wisconsin, he also completed an MBA at the University of South Carolina. Key markets previously served include healthcare, packaging, and industrial/consumer. Dane began his career in Technical Service and Application Development assignments, then moved onto roles in Marketing, Sales, and Business Development.

Title: PEEK in Medical Implant Applications
Presenter: Kenneth Ross – Evonik Corporation

Kenneth Ross currently serves as Evonik’s Business Development Manager for North & South America of the VESTAKEEP® implant grade PEEK product lines. Mr. Ross has over 12 years of experience in the orthopedic industry serving in key roles such as marketing, business development and strategy. His focus includes spine, trauma, orthopedics and soft tissue fields, with a recent focus on materials. He holds bachelor degrees in Business and Communications and an MBA in Strategic Management.

Title: 
Presenter: 

David Berry – Evonik Corporation

Dr. Berry has extensive experience in application development, process support, and product management for engineering and high performance thermoplastics resins and shapes. For the past 6 years, Dr. Berry has worked with EVONIK as an independent consultant supporting the application development of EVONIK’s VESTAKEEP® PEEK in a variety of industries and applications. Prior to this Dr. Berry has held numerous management positions with companies such as ARLON as Director of R&D at a coating/laminator, with VICTREX plc (parent company of Invibio) as a Global Product Manager for PEEK, and with BASF in Market Development for ASA resins. Dr. Berry received his B.S. degree in Chemical Engineering from Cornell University and his Ph.D. in Chemical Engineering from the University of Massachusetts, Amherst.

Morning Break

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Title: Openair® Plasma Improves Adhesion of LSR to Medical Grade Polymer Substrate Materials
Presenter: Jeff Leighty – Plasmatreat

Jeff Leighty has been with Plasmatreat since 2009 when the German parent company opened their first US technical center in Elgin, Illinois. He serves as Sales and Business Development Manager with a focus on applications for the life sciences market using atmospheric pressure plasma technology. Jeff has a 15-year background in surface finishing.

Title: Fluoropolymers in Healthcare Applications
Presenter: John Felton – Daikin – America

John Felton joined Daikin America, in November 2005 as a Senior Market Development Representative and in his current role is responsible for developing applications in both the Medical and Aerospace Markets. Globally headquartered in Osaka, Japan, Daikin Industries Ltd. is a worldwide leader in air conditioning systems, of which, fluorine chemistry is key. The fluoropolymers and fluorochemicals division has annual sales exceeding $1.2 billion. Before joining Daikin America, John worked as an account manager for Ticona Engineering Polymers where he was responsible for customer program development, material recommendations and design assistance. Prior to Ticona, John spent many years working for Injection molding companies as well as Electronics OEMs providing design and development support. John is a graduate of Western Washington University, holds a Bachelor of Science Degree in Manufacturing Engineering Technology and has been active in the plastics industry for over 25 years.

Title: Polycarbonate Resins for Medical Applications: Today and Tomorrow
Presenter: Pierre Moulinie – Bayer Material Science LLC

Obtained a Ph.D. in Polymer Chemistry at Carleton University in Ottawa in 1996
Joined Bayer in 1999 and has occupied various technical functions related to polycarbonate and polycarbonate blends.
Joined Bayer’s Global Innovation Blends group in Germany from 2004-2008
Since 2008 has been a scientist supporting Polycarbonate products for medical applications

MiniTec Technical Program subject to change.
Mrs. Colucci-Mizenko joined the SABIC Healthcare Marketing team in 2012 and currently holds the position of New Market Development Leader, Healthcare in their Innovative Plastics business unit. She has over 16 years of experience focused on materials and components used in the Healthcare market. Prior to joining SABIC, Lynn was the Global Marketing Director – Healthcare at Momentive Performance Materials from 2007-2012. Previous to joining Momentive, she worked for Saint-Gobain Performance Plastics for over 8 years in various commercial roles in their Healthcare business unit, including commercial leadership of the North American Medical business unit from 2003-2007. Lynn’s early career experience was with General Electric where she worked at both GE Energy in their Technical Leadership Program, and later as an Applications Engineer with GE Silicons prior to joining Saint-Gobain. Lynn is a graduate of Rensselaer Polytechnic Institute in Troy, NY with a BS and MS in Materials Engineering, as well as an MS in Urban and Environmental Studies.

Manish Nandi is a Lead Scientist in Healthcare Industry Technology group in the Innovative Plastics Business Unit at SABIC working on new product and technology development for healthcare applications. Prior to joining SABIC, from 2003-2011, Manish worked in area of new technology and product development at W. L. Gore and Associates. Prior to that, he worked for ARCO/Lyondell Chemical for over ten years in various Technology roles in their R&D. Manish received his Doctorate in Chemistry & Polymer Science from the Pennsylvania State University. He has BS and MS degrees in Chemistry from Calcutta University in India. Manish holds multiple patents and is the author of several technical papers in materials chemistry and polymers.
Afternoon Session on New Processing Technologies

Title: Exciting, New Extruded Tubing Materials for Medical Applications
Presenter: Ed Boarini – Teleflex Medical OEM

As Senior Vice-President of Strategy and Business Development, Ed Boarini sets the direction and scope of Teleflex Medical OEM’s strategic, business development, and acquisition activities that drive global expansion. In addition, Boarini leads key R&D and marketing initiatives that will bring innovation and leading-edge capabilities across its platform of custom-engineered extrusions, catheters, sutures and performance fibers.

Boarini joined Teleflex Medical OEM in 2004 as Vice-President of R&D and was later appointed to the role of Senior Vice-President and General Manager during 2007. With a strong commitment to and thorough understanding of the OEM customer’s needs, Boarini helped integrate various OEM facilities throughout Teleflex Incorporated to create a more cohesive, customer-focused supplier environment. This has led to improved product development, expansion of capabilities, market share growth, and penetration, as well as outstanding customer service.

Prior to Teleflex Medical OEM, Boarini accumulated over twenty years of executive management experience with several large medical device corporations including Baxter Healthcare, Boston Scientific, and CR Bard. He has left a legacy of double-digit growth, increased productivity and profitability, and innovative product launches.

Boarini earned a Bachelor of Science degree in Biology at the University of Illinois, Chicago and a Master of Science degree in Technology Management from Pepperdine University.

Title: Advantages of Co-extrusion for Use in Medical Tubing
Presenter: Tom Thompson – Teel Plastics

Tom Thompson is the President of Teel Plastics, Inc. He joined Teel in 1996 and before becoming President, he served as Chief Administrative Officer, Controller and Director of Corporate Support. Teel Plastics (www.teel.com) is a privately held company with over 220 employees and annual revenues of $49 million. Teel manufactures custom plastic tubing and profiles, and also has divisions manufacturing laboratory sampling products and custom compounding. Teel’s capabilities range from extruding over 50 different thermoplastic resins on an annual basis, as well as, a wide range of sizes (.015”-10” OD).

Prior to arriving at Teel, Tom spent 8 years as the Accounting Manager for U.S. Army Military bases located in Berlin, Germany and El Paso, Texas.
Title: PET: A Sustainable Material for Medical Packaging Applications

Presenter: Scott Steele – Plastics Technologies Inc.

Scott Steele oversees global operations for Plastic Technologies, Inc. (PTI). The company has a worldwide reputation as the technology leader for package development, rapid prototyping, pre-production prototyping, material evaluation and preform engineering. For the past 25 years, PTI has assisted leading brands by helping them successfully commercialize innovative, performance-oriented packaging containers.

He is recognized internationally as an expert in blow molding technology. Over the past three decades, he has led the development of a wide spectrum of design, development and manufacturing “firsts.” Steele also has extensive background in recycled polyethylene terephthalate (PET) resin technology, applications and commercializations. He joined Plastic Technologies in 1987 as one of the company’s first employees and was named president in 2012.

Steele is now expanding PTI’s capabilities into other packaging materials, processes and non-packaging applications. New material options include biopolymers (such as polylactic acid or PLA), as well as traditional resins such as polypropylene, which are increasingly being used in high performance applications. PTI also has expanded its processing capabilities beyond injection and stretch blow molding into sheet extrusion, thermoforming and extrusion blow molding.

His early high profile projects include the development of Coca-Cola’s first PET shaped plastic bottle in 1994, known as Contour. At the time, it was the most successful product launch in Coke’s history. This effort led to other successful developments of similar “shaped” bottles for additional brands.

Steele also managed the development and a commercialization partnership of a patented on-line thickness measuring technology for PET containers. This technology was licensed to a global instrument manufacturing company and successfully marketed under the trade name PETWall®.

He began his career at Owens-Illinois as a member of the team that developed and commercialized the world’s first successful PET carbonated soft drink container.

Additionally, Steele is the author of 11 U.S. and international patents and has served in numerous positions within The Society of Plastic Engineers. He has organized several national plastics conferences and has presented numerous technical papers at prestigious international conference events.

He received his B.S. degree in Chemical Engineering from the University of Toledo and was named a Distinguished Alumni in 2006.
Title: Why Your Perfect Mold and Process Produces Imperfect Parts  
Presenter: David Rose – Beaumont

Dave joined Beaumont Technologies in 2001 and his primary roles have involved Technical Sales and New Business Development. Prior to joining the Beaumont staff in April of 2001, Dave worked for the Plastics Technology Deployment Center, at Penn State Erie, The Behrend College, Erie, PA as a Project Engineer for product development and tooling/process support. He has also worked as an Engineering Manager for Composiflex also located in Erie, PA. Prior to Composiflex, he worked at Fisher-Price in New York. In addition to technical sales, he has experience in, new product development, tooling and process development, and project management. His experiences have afforded him the opportunity to work with both thermoplastic, and thermosetting composite materials such as Kevlar and carbon fiber epoxies. Other experienced areas include injection molding, gas-assist molding, extrusion blow molding, and resin transfer along with tooling knowledge for each of these processes. Dave has also authored a number of technical papers which have been presented at various technical conferences within the plastics and rubber industries.

Title: Advanced Process Controls for Injection Molding  
Presenter: Susan Montgomery – Priamus Systems

Ms. Susan Montgomery has been President of Priamus System Technologies, Brunswick, OH, since 2002. She has been in the plastic processing field for 19 years, most of this time spent in plastics process instrumentation and injection molding process controls. Ms. Montgomery holds a BS in Chemical Engineering from Cleveland State University (Ohio) and has done Master's coursework at SUNY Buffalo in Surface Chemistry and Engineering. She holds a Six Sigma Green Belt (from GE Plastics). Ms. Montgomery also served as Chair, SPE Injection Molding Division from 2011-2012 and 2012-2013. She was Injection Molding Division Technical Program Chair for ANTEC 2011. She is frequently a featured technical speaker and also a published singer and songwriter.

Umberto Catignani – Orbital Plastics

Mr. Catignani is President of Orbital Plastics Consulting, Inc., a consulting firm that has over 100 years of combined experience in processing, material selection, part design, failure analysis and tooling. Mr. Catignani is Past President of the Southern Section of SPE and has over 17 years of hands-on injection molding experience. He has certified and trained hundreds of plastic professionals in the industry. Past employers include IBM, General Motors, Delphi Automotive and Husky Injection Molding Systems. Mr. Catignani holds a Masters in Polymer Engineering from The University of Akron and a Bachelors in Materials Engineering from the University of Cincinnati.

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Title: 
Seeing Beyond the Surface: How CT Scanning Redefines Industrial Metrology  
Presenter:  
Tom Casali – NyproMold, Inc.

Tom Casali has been contributing to the production of high-precision injection mold solutions at NyproMold, Inc, of Clinton, Mass, since 2000. Tom was a key force in bringing CT Scanning Technology to NyproMold in 2010. Since that time he helped grow NyproMold’s offering of 3DProScan and provided solutions to customers in the medical, packaging, and consumer electronic markets.

In addition to his 3DProScan experience, Tom has several years of experience managing NyproMold’s qualification department, which consists of a state of the art injection molding technical center and metrology department. NyproMold’s Qualification Team provides its customers with a scientifically developed process capable of molding parts within customer specification and with the foundation to be transferred and replicated for production. Tom also has several years of design experience in automation and injection molds.

Q & A

Organizer and Moderator: Len Czuba – Czuba Enterprises, Inc.

Len is president of Czuba Enterprises, Inc. a Chicago area medical device product development company, where he serves as the materials expert. He works with clients to take products, especially medical devices, from concept to production. His primary focus is in the selection and processing of plastics and biomedical polymers used in medical devices. He holds 15 US patents including several for PVC replacement materials.

In 2004, Mr. Czuba was one of the 100 MD&DI Notable Persons in the medical device industry. He is a frequent conference speaker, moderator and instructor and has given presentations and seminars around the globe.

A member of the Society of Plastics Engineers since 1975, Mr. Czuba is past chairman of the Medical Plastics Division, was Councilor for the European Medical Polymers Division and was President of SPE during the 2005 – 2006 year. He is now a Distinguished Honored Service Member of SPE.

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