

MONDAY MAY 2, 2011

RESEARCH & DEVELOPMENT

STONE & CONCRETE, MINING & DRILLING

7:30 - 4:00 _____ REGISTRATION DESK OPEN
 7:00 - 8:00 _____ CONTINENTAL BREAKFAST
 8:00 - 8:15 _____ ROSEMONT BALLROOM "C&D", WELCOME & INTRODUCTION, **Dave Edwards & Terry Kane** - IDA of America
 8:15 - 9:00 — **KEYNOTE - DR. DEAN HO**, Associate Professor, Biomedical and Mechanical Engineering, Northwestern University

ROSEMONT BALLROOM "A"

9:00-9:15 **RESEARCH & DEVELOPMENT OVERVIEW**
 Chairperson, David Spelbrink, Lieber & Solow Company
 9:15-10:00 **# 1139 Properties And Performance Of HPHT Processed Diamond-Sic Composites**
Thomas Easley, Senior Development Engineer - Diamond Innovations, USA
 10:00-10:15 —**BREAK**—
 10:15-11:00 **# 1145 Cutting Performance Of Binderless PCD For High-Precision Micromachining**
Takeru Nakashima, Chief Engineer - Sumitomo Electric Hardmetal Corp., Japan
 11:00-11:45 **# 1146 X-Ray Tomography Of Diamond Synthesis Cores**
Heiner Vollstadt, Professor, Einar List - Vollstadt-Diamant GmbH, Germany, Felix Porsch - Fraunhofer, Germany
 12:00-1:00 — **LUNCH** —

ROSEMONT BALLROOM "B"

9:00- 09:15 **STONE/CONCRETE OVERVIEW**
 Chairperson - Keith Reckling, National Research Corporation
 9:15-10:00 **# 1119 Improving The Laser Welding Of Drill Bits**
Gerhard Weber - Dr. Fritsch, Germany
 10:00-10:15 —**BREAK**—
 10:15-11:00 **# 1147 Diamond Wire Cutting Slots In Dams To Relieve Concrete Stress Due To Alkali-Aggregate Reactivity (AAR) In Concrete**
Tim Beckman CEO, Joe Shebesta Project Engineer - Cutting Edge Services Corp. USA Michael Steeves, P.Eng., Civil Engineer, NB Power Generation at the Mactaquac Generating Station, New Brunswick, Canada
 11:00-11:45 **# 1165 The Design And Performance Of Trizact (Tm) Diamond Hx Abrasives For Grinding And Polishing Single-Phase And Composite Ceramic Substances Is Described**
James McArdle, Lead Product Development Specialist - 3M Abrasive Systems Division, USA
 12:00-1:00 —**LUNCH**—

1:00-1:45 **ROSEMONT BALLROOM "C&D" - KEYNOTE - MARK SCHWEIZER**, *President of Diamond Innovations, Inc. Worthington, Ohio USA*

ROSEMONT BALLROOM "A"

1:45-2:30 **# 1152 Surface Textured Diamond Particles - Properties And Applications** - *Dr. Ion Benea, Vice President Operation - Hyprez Products, Benjamin R. Rosczyk, Laura M. Fitzgerald - Engis Corporation, USA*
 2:30-2:45 —**BREAK**—
 2:45-3:30 **# 1156 Commercial Applications Of Electrically Conductive Diamond**
Dwain Aidala, President & COO - sp3 Diamond Technologies, USA
 3:30-4:15 **# 1164 State Of The Art CVD Synthetic Diamond: A Driving Force For Innovative Characterization Methods In Gem Labs**
Bert Williams, PhD - HRD Antwerp, Belgium, Alexandre Tallaire, Jocelyn Achard - LSPM-CNRS, Universite Paris, France
 4:15-5:00 **# 1117 Improvements To The Requirements Of The Friability Test Methods Are Suggested, Narrowing The Deviation On The Results**
Philippe Van Bogaert CEO, Sarah Van Bogaert Engineering Support - Bogimac NV-SA Belgium

ROSEMONT BALLROOM "B"

1:45-2:00 **MINING/DRILLING OVERVIEW -**
 Chairperson - Keith Reckling, National Research Company
 2:00-2:45 **# 1133 Study Of The Influence Of Cobalt Content On Polycrystalline Diamond (PCD) Mechanical Properties**
Dan Belnap, PhD, Yi Fang and Haibo Zhang - Megadiamond A Schlumberger Company, USA
 2:45-3:45 —**BREAK**—
 3:00-3:45 **# 1143 Diamond Impregnated Bit Enhanced With CVD Diamond Pins And It's Drilling Performance**
Dr. Baochang Liu, Associate Professor - College of Construction Engineering, Jilin University, China
 3:45-4:30 **# 1168 New Cutter Technology Improves Performance 30-70% In Existing PDC Drill Bit Designs**
Dan Scott, Anthony DiGiovanni, Nicholas Lyons, Derek Nelms, - Baker Hughes, USA

6:00 PM - 8:00 PM WELCOME RECEPTION - HORS D' OEUVRES & COCKTAILS

TUESDAY MAY 3, 2011

AEROSPACE

SUPERABRASIVES EDUCATION

ULTRAHARD & SUPERABRASIVE MATERIALS

7:30 - 4:00 _____ REGISTRATION DESK OPEN
 7:00 - 8:00 _____ CONTINENTAL BREAKFAST
 8:00 - 8:15 _____ ROSEMONT BALLROOM "C&D", WELCOME & INTRODUCTION, **Dave Edwards & Terry Kane** - IDA of America
 8:15 - 9:00 — **KEYNOTE - WALTER HÜHN**, Executive Director, Advanced Materials & Technologies Division, Element Six, Frankfurt, Germany

ROSEMONT BALLROOM "A"

9:00-9:15 **AEROSPACE OVERVIEW** - Chairperson - Troy Heuermann
 3M Abrasive Systems Division

9:15-10:00 **#1111 Influence Of Grinding Wheel Hub Material On The High Efficiency Deep Grinding (HEDG) Process**- *M. Sc. Alireza Vesali, Taghi Tawakroli, Professor, - Institute Of Grinding And Precision Technology (KSF), Germany*

10:00-10:15 —**BREAK**—

10:15-11:00 **#1125 Optimization Of Creep Feed Grinding Of Nickel-Based Alloys For Quality Production** - *Radu Pavel, Machining/Grinding Research Engineer, Xiqun Wang, Anil Srivastava - Techsolve Inc., USA*

11:00-11:45 **#1137 Improved Machining Of Non-Ferrous Metals Utilizing A New Fine Grained PCD** - *William Russell, Senior Development Engineer - Diamond Innovations, USA*

12:00-1:00 —**LUNCH**—

1:00-1:45 **#1166 Requirements For Cutting Tool Materials For The Airframe Industry** - *Jeff Lantrip, Assembly Technologies-Drilling Process Development - The Boeing Company, USA*

1:45-2:30 **#1142 Superalloy Grinding With Electroplated CBN Wheels And Influence Of Manufacturing Quality On Performance** - *Uppilli Sridharan, Grinding Application Development Engineer, Sridhar Kompella, Mesh Application Technology Manager - Diamond Innovations, USA*

ROSEMONT BALLROOM "B"

9:00-9:15 **EDUCATION OVERVIEW** - Chairperson, Dave Edwards
 Action Superabrasive Products, Inc.

9:15- 10:00 **INTRODUCTION: Abrasives - History, Types And Properties** *Lecturers - Chris Winkel, Worldwide Super-abrasives. Keith Reckling, National Research Company*

10:00-10:15 —**BREAK**—

10:15-12:00 **Superabrasive Grinding: Diamond Vs CBN-Materials Ground, Economics, Applications & Parameters** *Lecturers - Dave Edwards, Action Superabrasive Products, Inc. Radu Coman Winterthur-Wendt USA*

12:00-1:00 —**LUNCH**—

1:00-2:30 **Superabrasive Machining: Polycrystalline Diamond & PCBN Products For Machining, Turning, Milling And Drilling - Materials Machined, Application Parameters** *Lecturers - Mike Mustin, American Superabrasives Corp. Bob McCarthy, President of MTS Tool, Oakville Connecticut USA Scott Ries, Vollmer Of America Corp.*

2:30-2:45 —**BREAK**—

2:45-3:15 **Superabrasive Wear Materials: Wire Dies & Wear Parts, Polycrystalline And Single Crystal Materials And Applications** *Lecturer - Scott Ries, Vollmer Of America Corp.*

3:15-4:00 **Saw Diamond For Sawing, Drilling And Shaping: Diamond Types And Properties: Materials And Applications, Fracture/Performance Characteristics, Blades, Core Drills, Wire Saws And Bond Systems** *Lecturers - Stephen Kelly, Element 6. Rick Norland, Construction Solution*

4:00-4:30 **Wrap-Up - Resource Materials, Q&A Forum**
 All Lecturers

ROSEMONT BALLROOM "C&D"

9:00-9:15 **ULTRAHARD & SUPERABRASIVE MATERIALS OVERVIEW**
 Chairperson - Joe Connolly, Element 6

9:15-10:00 **#1114 Microstructure Control And Mechanical Properties Of Cubic Boron Nitride Nanocomposite**
Hee-Sub Park - ILJIN Diamond Co. Ltd., Korea

10:00-10:15 —**BREAK**—

10:15-11:00 **#1135 Converting From Conventional To Superabrasives**
Matt Huff, Product Specialist - Cinetic Landis Corp., USA

11:00-11:45 **#1144 Natural Diamond Trends In Mining And Markets Pose Interesting Challenges To Dealers, Diamond Tool Manufacturers And Endusers**
Steve Roffman, Vice President - Lieber And Solow Ltd., USA

12:00-1:00 —**LUNCH**—

1:00-1:45 **#1149 Effect Of Complex Grinding Assisted With EDM For Electrically Conductive PCD**
Dr. Manabu Iwai, Associate Professor, Shinichi Ninomiya, Kiyoshi Suzuki - Toyama Prefectural University, Japan

1:45-2:30 **#1151 Micro-Machining And Cutting Of Hard Materials Using Water Jet-Guided Laser Technology**
Alex Schreiner, Business Development Manager B. Carron, M. Pavius - Synova USA

2:30-2:45 —**BREAK**—

2:45-3:30 **#1183 Making Detonation Diamond From CO2**
Daren Swanson, B.Sc. (Hons.)(Eng.), President Envirodiamond Technologies Inc., Canada

5:30 PM - 10:30 PM OPTIONAL CHICAGO "DINE AROUND" TOUR - A PROGRESSIVE DINING EXPERIENCE & TOUR OF CHICAGO!

WEDNESDAY MAY 4, 2011

TOOL PROCESSING & PROPERTIES

ELECTRONICS & OPTICS

AUTOMOTIVE

7:30 - 4:00 _____ REGISTRATION DESK OPEN
 7:00 - 8:00 _____ CONTINENTAL BREAKFAST
 8:00 - 8:15 _____ ROSEMONT BALLROOM "C&D", WELCOME & INTRODUCTION, **Dave Edwards & Terry Kane** - IDA of America
 8:15 - 9:00 — **KEYNOTE - MITSUHIRO "CHIP" GOTO**, Managing Director, General Manager, Dept. Of Dev. Managing, Sumitomo Electric Hardmetal Corp., Japan

ROSEMONT BALLROOM "A"

9:00-9:15 **TOOL PROCESSING & PROPERTIES OVERVIEW** -
 Chairperson - Chris Winkel, Worldwide Superabrasives

9:15-10:00 **#1113 Novel Fe-Ni-Cu-Sn Matrix Materials For The Manufacture Of Diamond-Impregnated Tools**
Janusz Konstanty, PhD, Thomas F. Stephenson, Dorota Tyrala - AGH-University Of Science & Technology, Poland

10:00-10:15 —BREAK—

10:15-11:00 **#1118 Are HPHT Diamonds Good Tool Material For Precision Cutting?**
John Wang, Associate Professor - University Of Nevada, USA

11:00-11:45 **#1120 Increased Productivity In The Centerless Grinding Of PCD Buttons Through A Combination Of Advanced Machine Tools And Innovative Wheel Technologies** - *Ken Saucier, Saint-Gobain Abrasives, Mike Hitchiner, OEM Technology Manager, William Pflager - Landis Cinetic, USA*

12:00-1:00 —LUNCH—

1:00-1:45 **#1148 Material Property Of Newly Developed Pcd Made Up Of Electrically Conductive Diamond Particles**
Dr. Manabu Iwai, Associate Professor, Shinichi Ninomiya, Kiyoshi Suzuki - Toyama Prefectural University, Japan

1:45-2:30 **#1158 The Use Of Encapsulation For Diamond Tool Manufacture** - *David Egan, Senior Metallurgist, Cormac Lee, Mark O'Sullivan - Element Six, Ireland*

2:30-2:45 —BREAK—

2:45-3:30 **#1160 A New Paradigm In The Machining Of Wood And Composite Materials** - *Peter Harden, Manager Of Market Support Centre, Dermot O'Malley, Tom Toomey, David Downey - Element Six, Ireland*

3:30-4:15 **#1123 Technology And Equipment For The Manufacture Of Diamond Grinding Wheels Of Thermal Spray Coating**
Boris A. Eizner, Director Ing. A. Shvartsman - A. Termika Ltd., Israel

4:15-5:00 **#1182 Diamond/CBN Abrasive Wheels with Adaptive Abrasive Composite Technology for Ultra-High Capacity and Precision Finishing Machining of Hard-to-Machine Materials** - *Nikolay Ignatov, PhD, Chairman and CEO at Aignesco Abrasive Systems Co., Canada*

ROSEMONT BALLROOM "B"

9:00-9:15 **ELECTRONICS & OPTICS OVERVIEW** -
 Chairperson, Jay Lunzer, Lunzer, Inc.

9:15- 10:00 **#1124 Development Of Precision Fixed-Diamond Wire PWS** - *Nobuhide Nakamura - A.L.M.T. Corp. Japan*

10:00-10:15 —BREAK—

10:15-11:00 **#1130 Application And Manufacturing Of Electroplated Tools With Super-Abrasives For The Semiconductor And Solar Industry** - *Alfred Trenker, President - Trenker Abrasive Plant Technology, Germany*

11:00-11:45 **#1134 Nanotechnology For Manufacturing Ultrathermoconductive Composite Materials**
Smirnov Evgeny, Head Of Laboratory - Nanoengineering, Russia

12:00-1:00 —LUNCH—

1:00-1:45 **#1153 The Effect Of CVD Diamond Coated CMP Conditioner D** - *David Slutz - Morgan Technical Ceramics, USA*

1:45-2:30 **#1162 Large Single Crystal HPHT IIA Diamond For High Quality X-Ray Optical Plates At 3rd And 4th Generation Light Sources**
Paul Balog, PhD, Carlton Dodge, PhD, Raymond Spits, PhD - Element Six, British Isles, Ian Friel, PhD - Element Six, UK, Dr. Rer. Nat. Habil Jurgen Hartwig - European Synchrotron Radiation Facility, France

ROSEMONT BALLROOM "C&D"

9:00-9:15 **AUTOMOTIVE OVERVIEW**
 Chairperson - Aaron Nolan, Sumitomo Electric Carbide, Inc. Materials Group

9:15-10:00 **#1132 Finegrinding Developed As A Proven Process Comparable With Lapping To Finish High Precision Workpieces** - *Matthias Martin, Product Manager - Wendt GmbH Winterthur Technology Group, Germany*

10:00-10:15 —BREAK—

10:15-11:00 **#1115 Machining Performance And Mechanical Properties Of Solid Type PCBN (Polycrystalline Cubic Boron Nitride)**
Woo Sung Kim, ILJIN DIAMOND, Korea

11:00-11:45 **#1121 The Effects Of PCN Tool Wear On Cutting Forces And Surface Integrity In Finish Hard Turning**
Rahul Chaudhari, Manager, Machining And Finishing - The Timken Company, USA

12:00-1:00 —LUNCH—

1:00-1:45 **#1131 Characterization Of Vitrified CBN Grinding Wheels From A Thermal Perspective In Cam Grinding**
Don Cutchall, Senior Applications Engineer - Winterthur Wendt USA

1:45-2:30 **#1138 A Computer Model For Worn Cutting Edge In Hard Turning** - *Raja Kountanya, Senior Development Engineer - Diamond Innovations, USA*

12:00-1:00 —BREAK—

2:45-3:30 **#1161 New High Strength CBN Abrasive For Single Layer Tools** - *Cormac Lee, Applications Engineer, Mark O'Sullivan - Element Six, Ireland, Karolina Hannersjo - Element Six, Sweden*

3:30-4:15 **#1167 Development Of New PCBN Grade For Ferrous Powder Metal Finishing** - *Rich Maton, Toshiyuki (Tony) Sahashi, President - Sumitomo Electric Carbide Inc., USA*