JOIN THE INDUSTRY LEADERS

66th IWCS Conference October 8–11, 2017

Gaylord Palms Resort & Convention Center, Orlando, FL, USA

FINAL PROGRAM & SCHEDULE

#IWCS2017

IWCS

THE
International Cable & Connectivity Symposium

Industry Leadership, Innovation and Professional Development

INTRODUCTION

WELCOME TO ORLANDO!

The IWCS International Cable & Connectivity Symposium continues to be the premier venue for new technologies in cable and connectivity products, processes and applications. Your IWCS Symposium Committee has generated an outstanding high caliber program for the IWCS 2017 Conference at the Gaylord Palms Resort & Convention Center in Orlando, Florida, USA. We have a number of exciting enhancements this year that will provide you an excellent learning and networking experience! There are several new Sessions and Professional Development Courses to present new technologies and to promote discussion of ideas and innovations to advance connectivity solutions.

This is the 66th annual IWCS Conference, which is a testament to the value that we continue to bring to you and your international cable and connectivity industry colleagues. The vitality of the IWCS is demonstrated through the strong support coming from industry, both in terms of sponsorship and attendance, but also in the rich content for the Technical Symposium portion of the program. Our 2017 program contains over 150 papers and presentations in 20 compelling sessions right through Wednesday afternoon. The Supplier Exhibition continues its two-day program, providing plenty of opportunity and incentive for all attendees to visit with our industry's premier Suppliers.

Our Executive Session is designed for the general management of the cable & connectivity producing companies and their Suppliers. Important issues and economic trends facing the industry will be addressed by expert speakers, followed by a fascinating panel of industry CTO's and leaders with their visions for "Telecommunications in 2025". You will not want to miss this provocative and insightful session that will cover such topics as "5G Migration / Wireless Evolution", "What a Data Center will look like in 2025" and "How Do We Deal with Virtual Reality".

Valuable door prizes will once again be provided during the Conference. Win a Bose SoundLink® Bluetooth Speaker! All symposium registrants attending the Tuesday Poster Paper Session / Exhibit Hall and the Wednesday afternoon Technical Sessions are eligible to win. Must be present to win!

We recognize that networking is a critical element of any industry gathering, and we plan for plenty of opportunities at IWCS 2017 in Orlando. On Monday, IWCS will host a hospitality hour in the exhibit hall with your Suppliers and Customers. After the exhibits close, the Wire & Cable Industry Suppliers Association® (WCISA) will join us to host a reception to honor our industry's young professionals, new visitors to IWCS and students who are showing interest to join our industry upon graduation. Plan to join us for cocktails and hors d'oeuvres prior to your evening dinner plans.

Thank you, for joining us at IWCS 2017. Our most important goal is to meet all of your expectations for a valuable learning and networking experience. We look forward to meeting you and hearing of any suggestions you have to further improve your IWCS Conference in the years to come!

Interact with us on Twitter throughout the event. **#IWCS2017**

PROFESSIONAL DEVELOPMENT PROGRAM

This year, a variety of strong Professional Development Courses will be offered, providing a great learning opportunity from renowned industry experts. IWCS now presents four annual core courses of Copper 101, Fiber 101, Materials 101 and Extrusion 101. The core courses will provide those new to our cable & connectivity industry with basic technology information. The four elective courses will deliver current, leading edge topics geared at providing information on new areas of interest to engineers, scientists, and other cable & connectivity professionals. Over time, students completing three core courses, along with two electives, will be presented with an IWCS Professional Development achievement plaque. The Courses will commence on Sunday, October 8, 2017 at 8.00am with four concurrent sessions. Four more concurrent sessions will continue at 1:00pm. The Courses will conclude prior to the opening of the IWCS Technical Symposium, allowing attendees to participate both in the Courses and each aspect of the Symposium. Lunch will be provided to registrants of the Courses on Sunday.

TECHNICAL SYMPOSIUM

The cornerstone of our Conference, the IWCS Technical Symposium is recognized around the world as the premier technical symposium for cable and connectivity. In our 66th year, we will present well over 140 new and previously unpublished papers on research and development for cabling and connector/interconnect technologies, designs, components, materials, fabrication, performance, testing and applications. Compelling sessions this year include topics such as Advances in Fiber Connectivity, Performance & Design of Data and Power Cables, Ultra High Fiber and Roll-able Ribbon Cable, Network Management & Reliability, Codes & Standards and Flame Retardancy & Additives in Materials. Sessions will begin on Monday morning and end late afternoon on Wednesday.

PLENARY SESSION TO SHOWCASE A VISION OF A BETTER CONNECTED WORLD

The Plenary Session will feature the keynote address, A Better Connected World – Impact on Network Demand, presented by Fang Wei, Chief Cable and Connector Expert for Huawei Technologies in Shenzhen, China. Mr. Fang will provide a unique Chinese perspective on "Intelligentization", an ICT industrial revolution with enhanced connectivity becoming the new normal. He will explore new electrical and optical technologies that will be required in the network architecture to support 5G, higher bandwidth and data traffic growth. This promises to be a highlight of the 2017 Conference.

The plenary session will also feature recognition for the best papers and presenters of IWCS 2016 in Providence, Rhode Island, USA. The session is open to all Technical Symposium registered attendees.

SUPPLIER EXHIBITION AND NEW PRODUCT PRESENTATIONS

The IWCS Supplier Exhibition will include over 100 exhibits providing interaction among various levels of the Cable & Connectivity Supply Chain, to learn about the wide variety of product technologies and user applications. Also, New Product Presentations provide an opportunity for suppliers to report on the latest commercial product developments and services. The schedule for these presentations will be included in the registration package at the Conference. The two day program on Monday and Tuesday will provide plenty of opportunity and incentive for everyone to visit the exhibits and maximize your networking opportunities.

CONFERENCE REGISTRATION

Registration for all aspects of the IWCS International Cable & Connectivity Conference and Technical Symposium can be accomplished through our website (www.iwcs.org) or in person at the Conference. Specific information on both registration and hotel reservations is included on the IWCS website.

MONDAY NIGHT HOSPITALITY

All Conference attendees are invited as our guests to a cocktail reception on Monday, October 9th, from 6pm–7:30pm, immediately following the Suppliers' Exhibition. This reception will be held on the Coquina Lawn of the Gaylord Palms. This hospitality event is co-sponsored by Wire & Cable Industry Suppliers Association™ (WCISA) to honor scholarship recipients and students aspiring to join our industry. We hope you will join us to enjoy drinks and light hors d'oeuvres with your colleagues to wind down from a full day, prior to your dinner plans.

IWCS Photography Policy

Attendance at, or participation in, this conference constitutes consent to the use and distribution by IWCS of the attendee's image or voice for informational, publicity, promotional, and/or reporting purposes in print or electronic communications media.

Video Recordings by participants and other attendees during any portion of the conference is NOT allowed without prior written permission of IWCS.

Photographs of copyrighted, confidential and/or proprietary PowerPoint or other Presentation Slides are not to be taken, reproduced or distributed. Do NOT photograph any such images without prior permission of the Author / Presenter

PLENARY SESSION

CEO AND CHAIRMEN

David B. Kiddoo
CEO/Director
IWCS, Inc.
Shrewsbury, PA, USA

ROBERT A. WESSELS, JR.
Chairman of the Board
IWCS, Inc., CommScope Inc
Claremont, NC, USA

Eric Lawrence
Chairman, IWCS 2017
Symposium Committee
Berk-Tek, New Holland, PA, USA

KEYNOTE SPEAKER

A BETTER CONNECTED WORLD – IMPACT ON NETWORK DEMAND (ELECTRICAL AND OPTICAL CONNECTION TECHNOLOGIES)

Fang Wei
Chief Cable and Connector Expert, 2012 LABs
Huawei Technologies Co., Ltd.
Shenzhen, China

Abstract

From now until 2025, ICT is enabling the fourth industrial revolution – Intelligentization. ICT enables the digital economy transformation and is pivotal to national competitiveness. ICT energizes enterprise production systems and provides smart functions to boost efficiency and innovation. Industry digital transformation calls for new ICT architecture and a new ecosystem. New technologies power ICT innovation. A better connected world is coming and enhanced connectivity is becoming the new normal.

With the gradual arrival of the 5G era, the changes in the network architecture and applications will necessitate greater requirements and different designs for the cable and the connectors. With higher bandwidth and data traffic growth, the cable and connector will need to obtain the engineered balance of high speed, high frequency, high density, high efficiency and high reliability!

Bio

Fang Wei joined Huawei Technology Co., Ltd in 2000, having graduated University with Technical and Master's degrees in mechanical and electrical engineering. Fang Wei has worked in the Research and Development of Huawei's optical cable, connector and cable components. In 2013, he was appointed the Chief Cable and Connector Expert of Huawei, leading the engineering team for cables, connectors and cable assemblies. His leadership responsibilities also include the installation of auxiliary materials and to assure the competitiveness of Huawei's connectivity products.

PROFESSIONAL DEVELOPMENT COURSES

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SUNDAY, OCTOBER 8, 8:00 AM TO 12:00 PM

CU101: FUNDAMENTALS OF COPPER CONDUCTORS & METALLIC CABLE DESIGN & APPLICATIONS, Room Sun 2

Instructors:

Trent Hayes, Engineering Director, CommScope Incorporated, Claremont, NC, USA

Larry Bleich, Engineering Director, CommScope Incorporated, Catawba, NC, USA

Description

This course is an introduction to the design and application of copper conductor communications cables. Students will understand how coaxial, twisted pair and twin axial cables are designed and how they operate upon completing the class. The instructors will provide background material on the history of copper cabling followed by sections on applications, design and construction of cables. Current standards and design examples are also reviewed by the instructors. Materials that are typically used in copper conductor communication cables will be incorporated at a fairly high level into the design exercises.

Industry professionals desiring a basic knowledge of copper cabling systems will find the course of value.

FO101: FUNDAMENTALS OF OPTICAL FIBERS & FO CABLE DESIGN & APPLICATION, Room Sun 3

Instructor:

David A. Seddon, Senior Engineering Associate, Cable Technology, Corning Optical Communications, Hickory, NC, USA

Description

This course will explore several aspects of optical fiber and cable design technology with particular focus on products for communications. It will discuss application considerations to select a product appropriate for a given installation environment and the basic considerations necessary for successful design of optical fiber cables.

The first part of this course will outline the characteristics and fundamental operating principles of optical fibers and the key differences between Single-Mode and Multimode optical fibers. Included will be critical fiber parameters and their impact on system performance. Specific topics will include the Advantages of Optical Fiber, Optical Fiber Manufacturing, Total Internal Reflection, Attenuation, Dispersion, Polarization Mode Dispersion (PMD), Cutoff Wavelength and other optical parameters critical to optical communications.

The second part of this course will explore the functional requirements of optical fiber cables and some of the fundamental design equations which can be used to ensure a cable will meet a given installation or operational requirement. The course will also discuss selection of a product appropriate for a given installation environment. Structural differences between cables for indoor, outdoor, and specialty applications will be explored including stranded loose tube cables, central and stranded tube ribbon cables, tight buffered cables and optical power ground wire cables.

The course provides a basic overview of optical fiber fundamentals and optical cable design principles to those new to the fiber optic cables.

MA101: SELECTION & USE OF MATERIALS IN WIRE & CABLE, Room Sun 4

Instructors:

Dr. Mohamed Esseghir and Chester Kmiec, The Dow Chemical Company, Collegeville, PA, USA

Description

In this course, the selection and implementation of polymer materials used in the construction of wires and cables will be reviewed. The course will focus on polymer materials utilized in telecommunication cable applications with focus on twisted pair, coaxial, and fiber optic cables. An overview of the materials science essential to the polymer properties and additives employed in cable compounds will be covered to level-set all attendees. Further, the fundamental characteristics (advantages and disadvantages) of materials will be presented which can be then considered in selecting a material for use in a finished cable construction, with specific sections covering jackets, insulations and fiber optic materials. In addition, the effect of additives on material performance will also be discussed, particularly those that impart ultraviolet resistant and flame retardant properties on the materials.

The course is intended for all wire and cable practitioners including raw material suppliers, cable manufacturers, and end users interested in gaining a broad understanding of applied material selection as it relates to cable performance.

EX101: FUNDAMENTALS AND APPLICATIONS FOR WIRE & CABLE EXTRUSION, Room Sun 5

Instructor:

Dr. Yimsan Gau, Cable Consulting Services, Princeton, NJ, USA

Description

One of the most critical steps in the fabrication of plastic parts and products and specifically wire &

cable is the extrusion process. The process involves the extruder and screw as well as the properties of the materials being extruded. The course presents an overview of the extruder components, the three main functions of the extruder screws, the importance of mixing elements and their design concept. The impact of the three material properties, solid, thermodynamic and flow on the extrusion processes are also discussed.

In addition, the course includes three sections on extrusion stability, extrusion optimization, and troubleshooting. Stable extrusion is critical in controlling the electrical properties, physical properties and the dimensions of the cables. The factors which can lead to unstable extrusion and the two parameters used to monitor extrusion stability, head pressure and melt temperature are reviewed. Optimizing the extrusion process requires a good understanding of the energy input to the extrudate from the motor through the screw, and the energy input from the heated barrel through heat conduction. The energy input from the two sources and the setting of temperature profile on the barrel and die to achieve an optimal flow out of the extruder and die are presented. Examples of flow and pressure drop calculations are made to illustrate the modeling flow process in the extruder and die. The three requirements for successful troubleshooting extrusion problems are covered: step by step approach, good instrumentation and good understanding of the process. The important polymer properties affecting the extrusion process and performance are also discussed along with the typical problems in cable extrusion and new trend in extrusion technology. For completeness, a description of the different types of screws commonly used in wire & cable, their design concept, their advantages/disadvantages, and the fabrication lines of different type of cables and problems associated with them are included in the presentation package and will be presented as time permits.

The course provides useful reference material to process engineers planning to pursue more advanced studies in wire & cable extrusion, and practical hints and tools to help optimize the extrusion processes.

SUNDAY, OCTOBER 8, 1:00 PM TO 5:00 PM

EX202: THE ART AND SCIENCE OF EXTRUSION MACHINERY FOR WIRE AND CABLE, Room Sun 2

Instructor:
Dr. Stéphan Puissant, Process Manager, Maillefer SA, Switzerland

Description
The complete extrusion process is complex and involves a lot of machines having each a different function. The heart of the process being extrusion, we focus in this course on the extrusion group, i.e. extruder and cross head (distributor and tooling).

The single screw extruder seems to be a very simple machine. However, the extrusion process is complex as is governed by interacting laws from mechanical engineering, thermodynamics, flow mechanics, the properties of solid and molten polymers etc. Therefore, in a first step, the physical characteristics (viscosity, conductivity, melting) of polymers used in extrusion are presented. These properties will be the keys to understand the functioning of the thermoplastics extrusion process.

The material basis being covered, the focus will shift on the functioning of the single screw extruder. There the 3 functional zones of the extruder are introduced. For each zone, we will see its functioning in relation to material properties. This mechanism having been described, we will obtain some hints of the optimal screw designs (for some broader plastic families!), so as solutions which may be used to solve problematic issues.

After being plastified (molten), the polymer will be formed in its final shape by some extrusion head. In this part of the course, the basics of distributor design according to the materials are presented. After discussing the effects of distributor geometries, we will also compare different tool designs. And the influence of temperature settings on concentricity, adhesion and surface quality will be shown.

For each of the different items (extruder, X-head, even cooling) evoked in the course, we will try to give some practical hints in relation with a more theoretical approach.

This course is intended for people involved in extrusion and who want a basic analysis tool for identifying potential machinery bottlenecks due to the extrusion group, so as to solve some issues which are hampering the productivity and quality.

CN205: FIBER OPTIC CONNECTORS AND TESTING, Room Sun 3

Instructor:
Douglas Parker, Interconnect Consultant, Camarillo, CA, USA

Description
Fiber optic connectors are available in a variety of designs for providing excellent service in many environments. Selecting the best one for your application is an important decision. However, to insure that the connector was terminated properly and continues to keep the fiber data flowing with minimal loss, standardized installation and in-service testing must be done correctly.

We will review connector choices, pro's and con's, termination issues that can impact the reliability and performance of your connectorized fiber and cable and appropriate testing for the fiber and cable line configuration. Arguably the most critical issue in fiber optic connectorization is establishing and maintaining cleanliness in the connection once a high-quality termination is executed. We will review connector types, interface types (butt joint and expanded beam lens), splices (permanent connections), cleaning issues, the tools used to examine ends, the standards that exist and are developing to assist in properly testing for losses and assessing cleanliness.

The course includes limited hands-on use of test instruments to check fiber optic interconnections, making some subtle changes that demonstrate a dramatic effect on measured performance. There will be discussion on prevention of those conditions that result in poor performance. We will discuss today's fibers, coatings, cable strength members and jacketing that all are part of the termination process and influence the selection of the best connector, the best methods of termination and proper testing. Course notes will include references to standards and procedures which we will review to be aware of what is important in each step of the process of termination and the final inspection/testing procedure. The course will be helpful for designers, assemblers,

quality people and managers who need to know what is important to control in fiber optic connectorization, maintenance and testing.

FO210: INTRODUCTION TO FIBER OPTICS AND TESTING – BEST PRACTICES, Room Sun 4

Instructor:
Mark Kazes, RCDD; Light Brigade, Tukwila, WA, USA

Description
This course will start with a review of fiber optic communications – how and why fiber is used. We will discuss passive components used in multimode and single-mode fiber optic networks, including fiber, cable, connectors and hardware as well as typical topologies.

Much of the class will discuss test equipment and testing best practices for verifying proper installation as well as for troubleshooting. We will review optical loss test sets and certification testing, along with the different requirements for SM and MM. Proper cleaning and inspection of connectors and test ports will be reviewed. Review of OTDR testing – from how it works to proper settings to review of various events commonly seen in OTDR traces. Finally, we will take a look at other useful equipment like visual fault locators and optical fiber identifiers – how and when to use these.

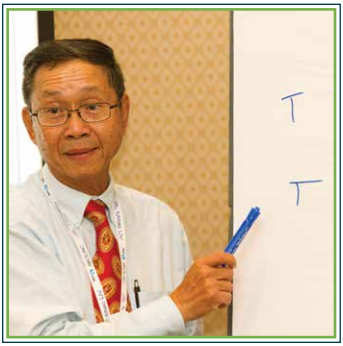
This course will provide a basic understanding for anyone involved in installing, testing, troubleshooting or managing fiber optic links. It would also be useful for anyone working in the industry who wants a fiber overview or better understanding of the field testing aspects of the business.

FO206: BEND RESISTANT SINGLE-MODE AND MULTIMODE FIBERS, Room Sun 5

Instructor:
Scott R. Bickham, Ph.D., Development Associate, Corning Optical Fiber, Corning, NY, USA

Description
This course starts with a brief refresher of optical waveguides, including the manufacturing process, attenuation mechanisms and the solutions of the scalar wave equation. This introduction will lead into a discussion of the macrobending in optical fibers and how it can be mitigated through fiber design. Designs of various bend-improved single mode fibers will then be compared, along with their performance and applications. The remainder of the course will be devoted to the design and applications of bend-improved multimode fibers, which have enabled significant reductions in the sizes of the cables, hardware and equipment that are deployed in data centers. Topics covered will include measurement of the differential mode delay to obtain the calculated modal bandwidth and key design aspects that balance macrobending performance with modal bandwidth and other optical properties.

This course should give the attendee the background to assess and compare the capability of bend-improved fibers in FTTX, Data Centers and other applications.



PLENARY SESSION LUNCHEON

MONDAY, OCTOBER 9, 12:00 PM—1:45 PM

Osceola Ballroom B

Registered Technical Symposium attendees only (Seats are Limited)

ANNOUNCEMENTS/GREETINGS

Robert A. Wessels, Jr., Chairman, IWCS, Inc. Board of Directors, CommScope, Inc., Claremont, NC, USA

David Kiddoo, CEO/Director, IWCS, Inc, Shrewsbury, PA, USA

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KEYNOTE SPEAKER

Fang Wei
Director for Cable and Connector Technologies
Huawei Technologies Co., Ltd., Shenzhen, China

"A Better Connected World – Impact on Network Demand / Electrical and Optical Connections Technologies"

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AWARDS AND RECOGNITION

Presented By

Eric Lawrence, Chairman, IWCS Symposium Committee, Berk-Tek, New Holland, PA, USA

Jack Spergel Memorial Award for Outstanding Technical Paper

Mauro Maritano, Paolo Marelli, Vito Scrima and Giacomo Colombo Serri
Prysmian S.p.A., Milano, Italy
and
Marta Garcia S. Emeterio
Draka Comteq Iberica Slu., Malano, Italy

"Solutions to Improve Optical Fiber Cables Flame Retardancy"

Outstanding Poster Paper

William C. Hurley, Terry L. Cooke and Rebecca E. Sistare
Corning Optical Communications, Hickory, NC, USA

"The Evolution of Trunk Cables with Eight Fiber Units"

Kitts-Kingsley Award for Best Presentation

Sarah Bauer
Enercon Industries Corporation, Menomonee Falls, WI, USA

"How Atmospheric Plasma Surface Treating Enables Ink Jet Printing on Wire and Cable"

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HONORING RETIRING IWCS MEMBER OF THE BOARD OF DIRECTORS

To

David Pheteplace
Bishop & Associates, Inc., Monument, CO, USA

Presented By

Robert A. Wessels, Jr., Chairman, IWCS, Inc. Board of Directors, CommScope, Inc., Claremont, NC, USA
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TECHNICAL SYMPOSIUM

MONDAY, OCTOBER 9, 8:00 AM—11:45 AM

SESSION 1: EXECUTIVE TRACK, Room Sun C

Chairperson: Robert M. Canny | TE Wire & Cable, New Jersey, USA

1-1 (8:00): A Tale of Two Cable Markets: Metal and Fiber - R. Mack, CRU International, Pennsylvania, USA

1-2 (8:30): Global Supply Trends for Plastics and Potential Policy Impacts of the new Trump Administration in the U.S. – P. Pineda, Plastics Industry Association, Washington, D.C., USA

1-3 (9:00): Economic Outlook, R. Fry, Robert Fry Economics LLC, Delaware, USA

BREAK (9:30 – 10:00)

Executive Panel Session: CTO's Crystal Ball – Telecommunications in 2025

Morgan Kurk – CommScope; Claudio Mazzali – Corning Optical Communications; Fang Wei - Huawei Technologies; Marcello Andrade - Prysmian Group; Toby Redshaw - Verizon

SESSION 2: FIBER OPTIC SPECIAL APPLICATIONS, Room Sun 4-6

Chairperson: Wayne Kachmar | Technical Horsepower Consulting LLC, Vermont, USA

2-1 (8:00) G.654 Optical Fiber Laying in Complex Environment for Terrestrial Communication - G. Zhang, J. Yuan, W. Chen, Q. Huang and L. Wang, Jiangsu Hengtong Optic-Electric Co., Ltd., Suzhou, China; L. Zhang and P. Lu, Jiangsu Hengtong Optical Fiber Technology Co., Ltd., Suzhou, China

2-2 (8:25) Successful Mass Production of Extremely Low Attenuation Submarine Cables - M. Kobiki, D. Masuda and H. Hayashi, OCC Corporation, Kitakyushu, Japan

2-3 (8:50) Large Reel Length High Strength Submarine Optical Fiber and its Application - G. Zhang, L. Wang, Q. Huang, J. Yuan and W. Chen, Jiangsu Hengtong Optic-Electric Co., Ltd., Suzhou, Chian; H. Song and P. Lu, Jiangsu Hengtong Optical Fiber Technology Co., Ltd., Suzhou, China

2-4 (9:15) Low Smoke, Zero Halogen Tight-Buffer Breakout Cables Containing Radiation Tolerant, Full-Fluorine Doped, Graded Index Multimode Optical Fibers - B.G. Risch, J. Rosko and R. Lovie, Prysmian Cables and Systems Telecommunications Americas, North Carolina, USA

BREAK (9:40 – 10:10)

2-5 (10:10) Evolution of Fluoropolymer Clad Fibers - D.A. Simoff, A.A. Stolov, H. Wu, N.E. Reyngold and X. Sun, OFS, Connecticut , USA

2-6 (10:35) Carburization Behavior of the 316L Stainless Steel in an Environment of Double Interface Layers-Graphite Product of Super High Temperature and Pure Water of Low Temperature - G. Zhang, T. Wang, Hengtong Optic-Electric Co., Ltd., Suzhou, China; J-I. Huang, Q. Li, M. Chen, L-F Jiang, Jiangsu NanFang Optical Fiber Technologies Co., Ltd., Changzhou, China; and B. Zhang, Xi'an Xigu Fiber Optica Communication Co., Ltd., China

2-7 (11:00) Intelligent Cable Jetting (Blowing) Machine: Records Installation Parameters and Safeguards Cable - W. Griffioen, L. Saint-Raymond, D. Plumettaz and C. Pache, Plumettaz SA, Bex Switzerland

MONDAY, OCTOBER 9, 12:00 PM—7:30 PM

See following events for specific times

PLENARY SESSION LUNCHEON, Osceola Ballroom B

12:00 PM – 1:45 PM

Keynote Speaker: Fang Wei, Director for Cable and Connector Technologies, Huawei Technologies Co., Ltd., Shenzhen, China

See page 8 for details

Exhibits, Exhibit Hall A
2:00 – 6:00 PM

New Product Introductions, Back of Exhibit Hall A
2:30 PM – 5:30 PM

Chairperson: David Braun | Teknor Apex Co., Rhode Island, USA

(Titles Will be Posted Onsite)

Hospitality Reception, Coquina Lawn
6:00 PM – 7:30 PM

TUESDAY, OCTOBER 10, 8:00 AM—11:50 AM

SESSION 3: COPPER CABLE MEASUREMENT, MODELLING, HEATING & AGING, Room Sun 1-3

Chairperson: Eduardo Garza | Hitachi Cable America, Inc., New Hampshire, USA

3-1 (8:00) Modeling of the Triaxial Setup to Measure the Screening Attenuation in the Case of Different Coupling Sections - T. Hähner, Nexans, Draveil, France; and T. Schmid, Rosenberger Hochfrequenztechnik, Fridolfing, Germany

3-2 (8:25) Method for Determining the Surface Resistivity of Prototype Conductors - W.C. Hopkinson, CommScope, North Carolina, USA

3-3 (8:50) Mixed-Mode S-Parameter Characterisation of Network Cable with a Four Port Network Analyser – E.C. Arihilam, H.G. Sasse and A.P. Duffy, De Montfort University, Leicester, United Kingdom

3-4 (9:15) An Improved Model for Balanced Cabling Channel Capacity - D.C. Hess, CORD DATA, Pennsylvania, USA

BREAK (9:40 – 10:10)

3-5 (10:10) The Effect of Nanoclays on Electrical Properties of Fluoropolymer Insulations - M. Beninca, M. Farmahini-Farahani and H. Noglik, ShawCor Ltd., Ontario, Canada

3-6 (10:35) Four Pair Power over Ethernet (4PPoE) Deployment: Standards, Performance & Challenge – T. Lanoe, C. McNutt and A. Sekhavat, Superior Essex International LP – Communications, Georgia, USA

3-7 (11:00) Temperature Rise due to Power Delivery over Ethernet at Equipment Interface - B. Marchant, Nexans, Pennsylvania, USA

3-8 (11:25) Impact of the High End Device Performance on the Requirements of the PoE Suitability of the Network Cabling - B. Jung, S. Grüner, T. Klotsch and D. Wilhelm, Cabling & Systems, Saarland, Germany

SESSION 4: WIRE AND CABLE MATERIALS, Room Sun 4-6

Chairperson: Daniel Winkler | LEONI Cable Inc., Michigan, USA

4-1 (8:00) High Performance Polymers in Wire & Cable - J.J. Henry, D. Kreh, J-Y. Sun and P. Ran, Arkema, Pennsylvania, USA

4-2 (8:25) The Effects of Fluoropolymer Selection on Electrical Performance in Twisted Pair Cabling - R.T. Young, F.W. Johnston, J.L. Netta and K.R. Walck, The Chemours Co., Delaware, USA

4-3 (8:50) ong-Term Effect of Thermal Variation on the Performance of Ethernet Cabling Dielectrics. – F. Akinnuoye, H. Sasse and A. Duffy, De Montfort University, Leicester, United Kingdom; Paul Cave, Excel Networking, Birmingham, United Kingdom; and S. Prescott, Consultancy Services Limited, Lancashire, United Kingdom

4-4 (9:15) New Ethylene Vinyl Acetate Copolymers for Wire and Cable Compounds - J.C. Haley, N. Palyam and C. Schneider, Celanese EVA Polymers, Kentucky, USA

BREAK (9:40 – 10:10)

4-5 (10:10) Enhanced Foaming Polyolefin Insulation for High Performance Telecommunication Cables - M. Esseghir and C. Kmiec, The Dow Chemical Co., Pennsylvania, USA; G. Sun, The Dow Chemical Co., Shanghai, P.R. China; and T. Geussens, Dow Europe GmbH, Horgen, Switzerland

4-6 (10:35) Cure Behavior of Optical Fiber Coatings with a UV-LED Curing System - T. Nakajima, H. Uchida and N. Shinohara, JSR Corp., Ibaraki, Japan

SESSION 5: FTTX, Room Sun C

Chairperson: Guy Castonguay | Corning Optical Communications, LLC, Arizona, USA

5-1 (8:00) Market Overview of Fiber Optic Cable – Its Place in North America Broadband – M. Render, RVA LLC Market Research, Oklahoma, USA

5-2 (8:25) ADSS Micromodule Cable Family for FTTx Applications - M. Garcia and F. Rebanal, Prysmian Group Spain, Maliaño, Spain; A. Lavenne and O. Tatat, Draka Comteq France, Calais, France

5-3 (8:50) The Advantages of Using Reduced Coating Diameter Optical Fibers (200µm) in ADSS Cables for Deployment in a FTTx Networks - P. van Zyl, CBI Electric Telecom Cables, Brits South Africa; and I. Davis, Corning Ltd., Flintshire, United Kingdom

5-4 (9:15) Study on Development and Properties of a New Drop Cable for FTTH - C. Zhou, L. Shi, S. Xie, X. Zhang, L. Mei and X. Yan, Hengtong Optic-Electric Co., Ltd., Jiangsu, P.R. China

BREAK (9:40 – 10:10)

5-5 (10:10) The Technique of Effective Utilization for Existing Underground and Aerial Optical Facilities – K. Murase, NTT West, Ibaraki, Japan

5-6 (10:35) A Double-Core Invisible Optical Cable for FTTH - B. Zhang, Y. Zhang, Z. Liu, G. Suo, Y. Zhu, J. Song, Z. Wang and S. Liu, Xi'an Xigu Fiber Optic Communication Co., Ltd., Shaanxi, P.R. China

SESSION 6: FIBER CHARACTERIZATION & RELIABILITY, Room Sun D

Chairperson: Kenneth Cornelison | Wire & Cable Technology Resources, Ohio, USA

6-1 (8:00) A Study of Nonlinear Coefficient Measurement Based on Continuous-Wave Dual-Frequency Method - L. Zhang, Y. Liu, J. Li, H. Zhou, X. Sun, S. Chen and L. Zhang, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Hubei, China

6-2 (8:25) DGD Measurement Of Few Mode Fibres Based On Mode Excitation - L. Shen, Y. Liu, L. Zhang, X. Sun, S. Chen and J. Li, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Hubei, China

6-3 (8:50) Study of Temperature and Strain Coefficients of Brillouin Frequency Shift for Ge-Free Single-Mode Optical Fibers - N. Korotkov and S. Akopov, Corning SNG, Moscow, Russia; and C. Wang, Corning Inc., North Carolina, USA

6-4 (9:15) Static n Value and Lifetime Measurement of Bend-Insensitive Optical Fibres by Uniform Bending Method - L. Zhang, J. Li, C. Yan and L. Liu, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Wuhan, China

BREAK (9:40 – 10:10)

6-5 (10:10) Environmental Effects on Static n Value of Silicon Optical Fibre - Z. Wenqi, J. Duan, L. Zhang, J. Li and C. Yan, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Wuhan, China

6-6 (10:35) Research on Splicing Reliability of G.654.B Submarine Optical Fiber - J. Yuan, W. Chen, G. Zhang, Q. Huang and L. Wang, Jiangsu Hengtong Optic-Electric Co., Ltd., Suzhou, China; H. Song, Z. He and L. Zhang, Jiangsu Hengtong Optical Fiber Technology Co., Ltd., Sushou, China

6-7 (11:00) The High Performance and Reliability Characteristics of 80-135 µm Polarization Maintaining Optical Fiber - C. Du, W. Luo, W. Qi, Y. Ke, L. Yan, T. Zhang, Z. Yu and Q. Lei, Ruiguang Telecommunications Technologies Co., Ltd., Wuhan, P.R. China

TUESDAY, OCTOBER 10, 11:00 AM—1:30 PM / 3:30 PM—6:00 PM

EXHIBITS, EXHIBIT HALL A

"Bose SoundLink® Bluetooth Speaker"–drawing in Poster Session area @ 5:30pm (must be present to win)

TUESDAY, OCTOBER 10, 1:00 PM—4:25 PM

SESSION 7: PERFORMANCE & DESIGN OF DATA AND POWER CABLES, Room Sun 1-3

Chairperson: Trent Hayes | CommScope, Inc., North Carolina, USA

7-1 (1:00) Study on Correlation Between Types of Shielding and their Performance on Coupling Attenuation - J.A. Martins, M.T. Souza, T.C. Fukui, P.M. Ito, S.A. Joly and H.J. Durigan, Furukawa Electric LatAm S.A., Paraná, Brazil

7-2 (1:25) Performance Comparison of Reduced Diameter Category 6A Cables – K. Cornelison, Industry Consultant, Ohio, USA; and E. Garza, Hitachi Cable America Inc., New Hampshire, USA

7-3 (1:50) Attenuation of Screened Twisted Pairs - J. Poltz, OptEM Engineering Inc., Alberta, Canada

BREAK (2:15 – 2:45)

7-4 (2:45) Numerical Approach to Derive Derating Factors for Buried Power Cables Loaded Unequally for Different Depths of Laying and No. of Circuits – S. Gaikwad and P. Vasani, Sterlite Technologies, Ltd., Maharashtra, India

7-5 (3:10) Clarification and Solution for the Service Life of Robot Cable - Taking the Machine Vision Cable as the Experimental Object - C. Lin, E. Wu, T. Chen, K. Wang and R. Lin, Walsin Lihwa Corp., New Taipei City, Taiwan

7-6 (3:35) Industrial Network Infrastructure, Your Future Business Foundation – R.J. Voss, Panduit Corp., Illinois, USA

SESSION 8: MANUFACTURING AND PROCESSING, Room Sun 4-6

Chairperson: Marcus Kemmler | Kemmler Consulting GmbH, Denkendorf, Germany

8-1 (1:00) Effect of Plastic Film on the Mechanical Properties of the Double-Surface Steel/PE Composite Strip - B. Zhang, F. Xuanhu, W. Zhenggang, L. Shengxian, Z. Yijun, Z. Bin, X. Weiqiang and L. Shaofeng, Furukawa Electric Xi'an Optical Co., Ltd., Xi'an, China

8-2 (1:25) Applying Modern Weathering Testing Methods to the Development of Sustainable Cable Materials - B. Tobin and A. Francis, Q-Lab Corporation, Ohio, USA

8-3 (1:50) Factorial Design Modeling & Process Optimization to Develop High Performance Dry Polypropylene Loose Tubes - V.F. de Albuquerque, J.C.V. da Silva and D. de Souza, Prysmian Cabos e Sistems do Brasil S.A., São Paulo, Brazil

BREAK (2:15 – 2:45)

8-4 (2:45) Research on Key Varibles' Effects on Polypropylene Gel Tube for High Speed Processing - J. Huang, X. Lu, Z. Xiong, B. Wan and M. Li, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Hubei, China

8-5 (3:10) Fiber Coating Quality Control Under High Draw Speed – Z. Wenqi, L. Deng, Q. Yuan, J. Cheng, R. Matai and Z. Jiang, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Wuhan, China

8-6 (3:35) Collecting and Leveraging Actionable Data from Existing Equipment - W. Sundblad, Oden Technologies, New York, USA

8-7 (4:00) Analysis of Industry Manufacturing, Quality and Reliability Programs – H. Knehr and M. Ozgur, Ericsson, New Jersey, USA

SESSION 9: ULTRA HIGH FIBER AND ROLL-ABLE RIBBON CABLE, Room Sun C

Chairperson: Eric Whitham | OFS, Georgia, USA

9-1 (1:00) Rm Dependent Optical Characteristics of High-Density Optical Fiber Cable with Rollable Multi-Core-Fiber Ribbons - M. Kikuchi, Y. Yamada, J. Kawataka, H. Izumita, T. Kurashima and K. Katayama, NTT Corp., Ibaraki, Japan

9-2 (1:25) Optical Loss Characteristics of Cables Containing 5-10 fibers/mm2 and Measured Lateral Pressure on Fibers in Cable Core - Y. Yamada, M. Kikuchi, J. Kawataka, H. Izumita and K. Katayama, NTT Corp., Ibaraki, Japan

9-3 (1:50) Ultra Compact Indoor Optical Fiber Cables & Applications - P. Van Vickle, D. Dancy, L. Rapp and J. Truckner, Sumitomo Electric Lightwave, North Carolina, USA

BREAK (2:15 – 2:45)

9-4 (2:45) High Density Fiber Optic Cables with Flame Retardant and Low Smoke Zero Halogen Properties – S. Shimizu, Y. Takahashi, T. Kobayashi, A. Namazue, and K. Osato, Fujikura Ltd., Chiba, Japan

9-5 (3:10) Characteristics of Ultra-High-Fiber-Count and High-Density Optical Cables with Pliable Ribbons - F. Sato, K. Ryan, Y. Nagao, T. Hirama, R. Oka and K. Takahashi, Sumitomo Electric Industries , Ltd., Yokohama, Japan

9-6 (3:35) Development of Ultra-High Density and Fiber-Count WTC with SWR – M. Ono, S. Kaneko, T. Kaji, K. Tomikawa and K. Osato, Fujikura Ltd., Chiba, Japan

SESSION 10: OPTICAL FIBER MANUFACTURING, Room Sun D

Chairperson: Ad Abel | DSM Functional Materials, Hoek Van Holland, The Netherlands

10-1 (1:00) Study on Fluorine Doping Technique of Optical Fiber Preform - P. Cao, N. Xiang, Y. Wang, K. Ma, C. Feng, S. Du, H. Xiao, S. Zhenqiang, X. Hua and M. Jianqiang, Jiangsu Hengtong Optical Materiald Co., Ltd., Jiangsu Province, China

10-2 (1:25) Production of Low-Cost Bending-Insensitive Fibers Using Large-Size Fiber Preforms - C. Wu, L. Zhang, R. Wang, H. Wang, L. Zhang and R. Matai, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Wuhan, China

10-3 (1:50) Ultra Low Loss Series Fiber Made By PCVD Process – R. Matai, L. Zhang, R. Wang, J. Wu, J. Zhu, and H. Wang, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Wuhan, China

BREAK (2:15 – 2:45)

10-4 (2:45) Design of Filling Compound Compatibility of Optical Fiber Based on Oil Swelling in Coating - N. Iwaguchi, K. Sohma and T. Fujii, Sumitomo Electric Industries, Ltd., Yokohama, Japan

10-5 (3:10) Measurement of Broadband and LED UV Lamp Irradiance in Standard Draw Tower Configuration - D. Leonhardt, B. Skinner, C. Harper and P.K. Swain, Heraeus Noblelight America LLC, Maryland, USA; and R. Dreiskemper, Heraeus Noblelight GmbH, Hanau, Germany

10-6 (3:35) Cure Speed Measurements of UV-LED Curable Optical Fiber Coatings – B. Seurer, X. Wu, K. Thomas and T. Ho, DSM Functional Materials, Illinois, USA

TUESDAY, OCTOBER 10, 4:00 PM—6:00 PM

POSTER SESSION, Back of Exhibit Hall A

Chairpersons: Eric Whitham | OFS, Georgia, USA

Professor Alistair Duffy | De Montfort University, Leicester, United Kingdom

P-1 A Novel Filling Technology for Low-Viscosity Grease Used in the Loose Tube - Q. Yu, L. Wang, G. Hu, Q. Qi, L. Chen and K. Fu, FiberHome Telecommunication Technologies Co., Ltd., Hubei, P.R. China

P-2 Research on the Reliability of All Dry Optical Cable - J. Cai, X. Lu, J. He, Z. Xiong, B. Wan and M. Li, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Hubei, China

P-3 Development Status and Application Research of Fiber Bundle in China - G. Hu, Q. Yu, K. Fu, L. Chen and Q. Qi, FiberHome Telecommunication Technologies Co., Ltd., Hubei, P.R. China

P-4 Development of Indoor/Outdoor Cables with LSZH Sheath Used in Harsh Environment - L. Deng, J. He, X. Su, H. Hu, X. Lu, B. Wan, Z. Xiong, Yangtze Optical Fiber and Cable Joint Stock Ltd., Co., Wuhan, China

P-5 Optimization of 12 Core MCF with Hexagonal Close-Packed Structure - R. Sugizaki, K. Maeda and K. Kawasaki, Furukawa Electric, Chiba, Japan; R.V. Jensen and B. Pálsdóttir, OFS Denmark, Brøndby, Denmark

CONFERENCE AT A GLANCE

Sunday, October 8

7:00 AM–8:00 AM
Instructors' Orientation Breakfast
(Miami Room)

8:00 AM–12:00 PM
Professional Development Courses

- **CU101**: Fundamentals of Copper Conductors & Metallic Cable Design & Applications **(Sun 2)**
- **FO101:** Fundamentals of Optical Fibers & FO Cable Design & Application **(Sun 3)**
- **MA101**: Selection & Use of Materials in Wire & Cable **(Sun 4)**
- **EX101**: Fundamentals & Applications for Wire & Cable Extrusion **(Sun 5)**

9:45 AM Coffee Break **(Sun Foyer)**

12:00 PM–1:00 PM
Lunch
(Instructors And Students Only)
(Miami Room)

1:00 PM–5:00 PM
Professional Development Courses

- **EX202**: The Art & Science of Extrusion Machinery for Wire & Cable **(Sun 2)**
- **CN205**: Fiber Optic Connectors and Testing **(Sun 3)**
- **FO210**: Introduction to Fiber Optics & Testing – Best Practices **(Sun 4)**
- **FO206**: Bend Resistant Single-Mode and Multimode Fibers **(Sun 5)**

2:45 PM Coffee Break **(Sun Foyer)**

Monday, October 9

6:00AM - 1:30PM
Supplier Exhibition Setup
(Exhibit Hall A)

7:00 AM–8:00 AM
Speakers' Orientation Breakfast
(Miami Room)

8:00 AM - 11:45 AM
Session 1
(Sun C)

8:00 AM - 11:45 AM
Session 2
(Sun 4-6)

9:40 - 10:10 Coffee Break
(Sun C & D Lobby)

Executive Track

Fiber Optic Special Applications

12:00 PM–1:45 PM
Plenary Session with Awards
(Lunch Included)
Keynote Speaker: Fang Wei, Huawei Technologies Co., Ltd.
(Osceola Ballroom B)

2:00 PM–6:00 PM
Supplier Exhibition
(Exhibit Hall A)
Refreshments 4:00–6:00 PM

2:30 PM–5:30 PM
New Product Presentations
(Back of Exhibit Hall A)

6:00 PM–7:30 PM
Reception
(Coquina Lawn)

Tuesday, October 10

7:00 AM–8:00 AM
Speakers' Orientation Breakfast
(Miami Room)

8:00 AM - 11:50 AM
Session 3
(Sun 1-3)

8:00 AM - 11:50 AM
Session 4
(Sun 4-5)

8:00 AM - 11:50 AM
Session 5
(Sun C)

8:00 AM - 11:50 AM
Session 6
(Sun D)

9:40 - 10:10 Coffee Break
(Sun C Lobby)

Copper Cable Measurement, Modelling, Heating & Aging

Wire & Cable Materials

FTTX

Fiber Characteriza-tion & Reliabilty

12:00 PM–1:00 PM
Lunch on Own

1:00 PM - 4:25 PM
Session 7
(Sun 1-3)

1:00 PM - 4:25 PM
Session 8
(Sun 4-6)

1:00 PM - 4:25 PM
Session 9
(Sun C)

1:00 PM - 4:25 PM
Session 10
(Sun D)

2:15 - 2:45 Coffee Break **(Sun C Lobby)**

Performance & Design of Data and Power Cables

Manufacturing and Processing

Ultra High Fiber and Roll-able Ribbon Cable

Optical Fiber Manufacturing

4:00 PM–6:00 PM
Poster Paper Session
(Back of Exhibit Hall A)
"Bose SoundLink® Bluetooth Speaker" drawing ~ 5:30PM must be present to win

11:00 AM – 1:30 PM
Supplier Exhibition
(Exhibit Hall A)

3:30 PM – 6:00 PM
Supplier Exhibition
(Exhibit Hall A)
Refresh-ments 4:00–6:00 PM

Wednesday, October 11

7:00 AM–8:00 AM
Speakers' Orientation Breakfast
(Miami Room)

8:00 AM - 11:50 AM
Session 11
(Sun 1-3)

8:00 AM - 11:50 AM
Session 12
(Sun 4-6)

8:00 AM - 11:50 AM
Session 13
(Sun C)

8:00 AM - 11:50 AM
Session 14
(Sun D)

9:40 - 10:10 Coffee Break
(Sun C Lobby)

Advances in Fiber Connectivity

Codes & Standards

Next Generation Fiber Cable Design

Single-mode & Few-Mode Fibers

12:00 PM–1:00 PM
Lunch on Own

1:00 PM - 4:00 PM
Session 15
(Sun 1-3)

1:00 PM - 3:35 PM
Session 16
(Sun 4-6)

1:00 PM - 4:00 PM
Session 17
(Sun C)

1:00 PM - 4:00 PM
Session 18
(Sun D)

2:15 - 2:45 Coffee Break **(Sun C Lobby)**
"Bose SoundLink® Bluetooth Speaker" drawing - must be present to win

Commercial Applications

Materials: Flame Retardancy and Additives

Network Management & Reliability

Short Reach, High Capacity Optical Interconnects

P-6 Outlook for the Coaxial Cables in the Forthcoming 5G Mobile Networks - K. Dai, Jiangsu Trigiant Technology Co., Ltd., Jiangsu Province, China

P-7 Development of the Cable and Cable Fitting for Rural Informatization Construction - C. Zhou, T. Li, D. Yang, G. Lei, Y.M. Wang, W.Z. Chen, and T. Ai, Hengtong Optic-Electric Co., Ltd., Jiangsu, P.R. China

P-8 Optical Fiber Composite Young's Modulus: Theoretical Approach, Line Tracking Method, and Finite Element Analysis – S. Gaikwad, S. Girawale, S. Bhaumik and C. Saha, Sterlite Technologies Ltd., Maharashtra, India

P-9 Influence of Freezing Condition on All-Dry Cable with Water-Blocking Yarn after Water Absorption - Z. Xiong, Y. Ruan, Y. Xu, and X. Liu, Yangtze Optical Fiber and Cable Joint Stock Ltd., Co., Wuhan, P.R. China; and L. Xiaoli, Huawei Technologies Co., Ltd., Guangdong, P.R. China

P-10 Invisible Cable for Installation at Room Temperature - J. Huang, B. Wan, Z. Xiong, X. Lu, H. Duan and H. Hu, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Wuhan, P.R. China

P-11 Solutions for Central Unit Structure ADSS Cable in Access Network Operation - W. Liu, W. Liao, C. Chen and J. Fu, Fibehome Telecommunication Technologies Co., Ltd., Hubei, P.R. China

P-12 The Miniaturized all Dielectric Self-Supporting Optical Fiber Cable Used in Sapiential City - H. Shi, W. Lin, C. Shen, B. Lu, F. Gao, Y. Wang, P. Liu and Q. Meng, Hengtong Optic-Electric Co., Ltd., Jiangsu, P.R. China

P-13 Green Chemistry to Manage Pests in Cable Industry – C. Joshi and M. Palsamkar, CTech Corporation, Mumbai, India

P-14 Study and Control of Welding Quality of Stainless Tube and its Influences on OPGW Cable Stranding Process - Q. Qi, K. Fu, L. Chen, G. Hu, M. He and H. Wang, FiberHome Telecommunication Technologies Co., Ltd., Hubei, P.R. China

P-15 Effect of Resin Structure on the Oil Resistance Properties of Flame Retardant Polyolefin Compounds - P. Cao, Y. Sun, X. Cheng, C. Huang, and C. Wang, Hengtong Optic-Electric Co., Ltd., Jiangsu, P.R. China

P-16 Application of G.657B3 Optical Fiber in Invisible Optical Cable – G. You, H. Xu, S. Cao, Z. Liu and Z. Wang, Zhongtian Technology Fibre Optics Co. Ltd., Jiangsu, China; and W. Miao, Jiangsu Zhongtian Technology Co., Ltd., Jiangsu, China

P-17 Study on the Reliability Performance of the Polypropylene(PP) Loose tube - L. Chen, Q. Qi, G. Hu, M. Yang, M. He, G. Hu and C. Liu, FiberHome Telecommunication Technologies Co., Ltd., Hubei, P.R. China

P-18 Study of PE Sheathing Shrinkage in Optical Cable - L. Li, Y. He, G. Hu, G. Hu, M. He and C. Liu, FiberHome Telecommunication Technologies Co., Ltd., Hubei, China

P-19 Long Term Response of Radiation Tolerant Multimode Optical Fiber Designs to Gamma Radiation Exposure - J.Y. Kim, E. Quiroga, Y. Yang, A. Lakhia and G. Pickrell, Virginia Polytechnic Institute and State University, Virginia, USA; B.G. Risch, Prysmian Group, North Carolina, USA

P-20 Design and Performance Study of PP all Dry ADSS Cable - H. Zhang, W. Liu, L. Li, H. Liu and Z. Xiong, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Hubei, China

P-21 The Multicore Fiber Preform Processing Techniques and the Multicore Fiber Properties – H. Yu, Y. Zhang, and Q. Mo, FiberHome Telecommunications Technologies, Hubei, P.R. China

P-22 Development and Application of Multifunctional Lightweight Lightning-Proof Optical Cables for Access Network - P. Liu, L. Zhan, P. Cao, Q. Meng, H. Shi, Q. Han and Y. Sun, Hengtong Optic-Electric Co., Ltd., Jiangsu P.R. China

P-23 Influence Factors Analysis for Polyethylene Sheath Shrinkage of Access Network Optical Fiber Cable - C. Wang, H. Zhou and W. Miao, Jiangsu Zhongtian Technology Co., Ltd., Nantong, China

P-24 Application of Ceramic Low Smoke Zero Halogen Polyolefin in Fire-Resistant Fiber Optic Cable - B. Shen, B. Miao, X. Li and X. Miao, ZTT (Jiangsu Zhongtian Technology Co., Ltd.), Jiangsu Province, China

P-25 The Impact of Parameters Setting in Optical Fiber Design on Raman Gain Coefficient - L. Zhang, X. Sun, S. Chen, R. Wang, H. Wang, H. Zhou, Y. Liu, L. Zhang and J. Li, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Wuhan, China

P-26 Application Research of LCX in LTE-M System – L.L. Lin, R.J. Zhao, B. Wang, Y.R. Lan and D.B. Huang, Zhongtian Radio Frequency Cable Co., Ltd., Jiangsu Province, P.R. China

P-27 Design and Development of Low Friction Coaxial Cable – Z. Wen, B. Wang, Y. Lan and D. Huang, Zhongtian Radio Frequency Cable Co., Ltd., Jiangsu, P.R. China

P-28 Design of Low Loss Optical Fiber with Large Effective Area - Y. Fan, X. Jiang, Y. Shen, M. Tang and H. Zhou, Zhongtian Technology Advanced Materials Co., Ltd., Jiangsu, China; F. Zheng and W. Li, State Grid Information & Telecommunications Branch Lt, Beijing, China

P-29 Discussion on the Factors Affecting Performance of the High Frequency - W. Shi, D. Huang, X. Li, S. Zhang and Y. Lan, Zhongtian Radio Frequency Cable Co., Ltd., Jiangsu, P.R. China

P-30 High-Voltage Cable for New Energy Vehicles - X. Xie, Q. Yao, B. Liang, Y. Ma and L. Ye, Zhongtian Technology Industrial Wire & Cable System Co., Ltd., Jiangsu, China

P-31 Fiber Ribbon Dimensional Measurement and Color Sequence Verification - C. Girdwood and A. McCloskey, Taymer International Inc., Ontario, Canada

WEDNESDAY, OCTOBER 11, 8:00 AM—11:50 AM

SESSION 11: ADVANCES IN FIBER CONNECTIVITY, Room Sun 1-3

Chairperson: Mike Gurreri | CommScope, Inc., Pennsylvania, USA

11-1 (8:00) Low-Loss MM MPO Connectors Under EF Launched Power Condition. Theoretical Simulation and Experimental Results – T. Satake, S. Lutz, S. Chuang, K. Wang and M. Hughes, US Conec Ltd., North Carolina, USA

11-2 (8:25) Work Support System Using AR Technology for Optical Network Element Operation in Central Offices - Y. Koshikiya, Y. Enomoto and T. Manabe, NTT Corporation, Ibaraki, Japan

11-3 (8:50) New Single-Fiber Cleaving Technique with Simple Mechanism for Mechanical Splice

Type Field Mountable Single-Mode Optical Fiber Connector - R. Koyama, C. Fukai, M. Kihara and K. Katayama, NTT Corp., Ibaraki, Japan

11-4 (9:15) Short Size and Low-Loss MPO Connector for High-Density Optical Interconnection Applications – S. Kanno, T. Otomitsu, K. Fujiwara and K. Takizawa, Fujikura Ltd., Chiba, Japan

BREAK (9:40 – 10:10)

11-5 (10:10) Statistical Methods for Modeling Optical Network Loss Budget - S. Zimmel, CommScope, Minnesota, USA

11-6 (10:35) Multi-Function Joint Closure - L. Cavenaghi and I. Griffiths, Prysmian S.P.A., Milan, Italy

11-7 (11:00) New Ribbon Fiber Stripper and Fiber Holder - S. Tanaka, S. Sagae, S. Sakanishi, N. Maezawa and Y. Kanda, Fujikura Ltd., Chiba, Japan

11-8 (11:25) Fiber Optic Cable Assembly Manufacturing Process Improvements: The Often-Overlooked Benefits of Industry Standards – D. Rocheleau, Fiber Optic Center, Inc., Massachusetts, USA

SESSION 12: CODES AND STANDARDS, Room Sun 4-6

Chairperson: Eric Lawrence | Berk-Tek, Pennsylvania, USA

12-1 (8:00) UL Standard Proposals, Recent Revisions and North American Harmonization Activites - S. Stene, UL LLC, Fremont, CA

12-2 (8:25) Cable and Connectivity Standards Where Will They Meet? - W.M. Kachmar, Technical Horsepower Consulting LLC, Vermont, USA

12-3 (8:50) Cabling for HDBaseT and Power over HDBaseT (PoH) – A. Tassone, UL LLC, New York, USA

12-4 (9:15) Communications Cable Fire Performance Hierarchy - S. Kaufman, CableSafe, Inc., Georgia, USA; F. Dawson, The Chemours Canda Co, Ontario, Canada; and G.L. Dorna, Belden Inc., Indiana, USA

BREAK (9:40 – 10:10)

12-5 (10:10) Investigation of Reliability of the Test for Assessing Reaction to Fire of Cables According to CPR - K. Langfeld and T. Meyer, Corning Optical Communications GmbH & Co., KG, Berlin, Germany

12-6 (10:35) Research on EU CPR Standards and Optical Cable Certification - P. Cao, F. Min, L. Pengdong, M. Qingwei, S. Huiping, S. Qianqian and S. Yixing, Hengtong Optic-Electric Co., Ltd., Jiangsu, P.R. China

12-7 (11:00) Simulation of Cable Flammability Testing with Computational Fluid Dynamics - A.C. Freeland, F. Xia and P.A. Rajeshirke, Corning Inc., Corning, NY

SESSION 13: NEXT GENERATION FIBER CABLE DESIGN, Room Sun C

Chairperson: Jeff Barker | Prysmian Group, North Carolina, USA

13-1 (8:00) Solving Difficult Problems while Customizing Cables to Reduce Installation Cost - W. McCollough, D.A. Seddon and M. Gimblet, Global Technology, Optical Fiber & Cable, North Carolina, USA

13-2 (8:25) Development of Low Friction, Dual Rated, Pushable Cable - N.P. Pausan, A.M. Abbas, D.J. Walker and M. Livesey, CommScope Connectivity UK Ltd., Bodelwyddan, United Kingdom

13-3 (8:50) Research on Several Types of Aerial Drop Fiber Optic Cable with Rated Tensile Strength - H. Shi, W. Lin, B. Jiang, H. Wang, B. Lu, F. Gao, Y. Wang, P. Liu and Q. Meng, Hengtong Optic-Electric Co., Ltd., Jiangsu, P.R. China

13-4 (9:15) Next Generation Compact Interconnect and Backbone Cables for Multifiber Connectivity – H. Toland, A. Scarpaci, D. Benjamin, P. Weimann and G. Sandels, OFS Fitel, LLC, Georgia, USA

BREAK (9:40 – 10:10)

13-5 (10:10) The Development and Application Discuss of the Prefabricated End Double Core Parallel Branch Butterfly Fiber Optic Cable - C. Zhou, Z. Li, L. Shi, S. Xie, W. Xin, X. Yan, Hengtong Optic-Electric Co., Ltd., Jiangsu, P.R. China

13-6 (10:35) Intelligent Cable for Resources Management System - J. Cai, B. Wan, Z. Xiong, X. Lu, H. Duan and H. Hu, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Wuhan, P.R. China

13-7 (11:00) Exploration on Solution of Flexible and Anti-Bending Optical Cables - P. Liu, H. Fei, R. Wang, D. Wu, Q. Meng, H. Shi and Y. Sun, Hengtong Optic-Electric Co., Ltd., Jiangsu, P.R. China

SESSION 14: Single-Mode and Few-Mode Fibers, Room Sun D

Chairperson: Dr. C. Bertil Arvidsson | Fiberson AB, Hudiksvall, Sweden

14-1 (8:00) A Novel Ultra Low Loss Few Mode Fibre - L. Shen, H. Zhou, R. Wang, L. Zhang, J. Wu, L. Zhang, S. Chen and H. Wang, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Wuhan, China

14-2 (8:25) Design and Fabrication of 9-LP-Mode Fiber with Low DGD and Low Loss - L. Shen, S. Chen, X. Sun, L. Yaping, L. Zhang and H. Zhou, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Hubei, P.R. China

14-3 (8:50) Dispersion Measurements in Few Mode Fibers - A. Novick, B. Kose, J.M. Castro, R. Pimpinella, P. Huang, and B. Lane, Panduit Corp., Illinois, USA; J.E. Antonio-Lopez, J.C.A., Zacarias and R.A. Correa, University of Central Florida, Florida, USA; M. Bigot-Astruc, D. Molin, A. Amezcua-Correa and P. Sillard, Prysmian Group, Haisnes, France

14-4 (9:15) Multimode Fibers for Mode Division Multiplexing - B. Risch, Prysmian Group, North Carolina, USA; and P. Sillard, D. Molin and M. Bigot-Astruc, Prysmian Group, Haisnes, France; K. de Jongh and F. Achten, Prysmian Group, Eindhoven, The Netherlands

BREAK (9:40 – 10:10)

14-5 (10:10) Low Attenuation and Large Aeff Fiber with a Matched-Cladding Profile - D. Sega, K. Okada, R. Maruyama, K. Nagasu, H. Nakagome, T. Onodera, A. Murata and S. Matsuo, Fujikura Ltd., Chiba, Japan

14-6 (10:35) A Novel Single Mode Fiber with Ultra-Low Loss and Large Effective Area - L. Deng, P. Li, R. Wang, H. Wang, L. Zhang and J. Zhu, Yangtze Optical Fiber and Cable Joint Stock Ltd., Co., Wuhan, China

14-7 (11:00) Issues Concerning Dissimilar Single Mode Fiber Splicing – D. Duke and D.W. Mansperger, AFL, South Carolina, USA

14-8 (11:25) A Ultra Low Loss Single Mode Fibre - L. Deng, J. Wu, R. Wang, L. Zhang, L. Zhang, H. Zhou, J. Zhu, H. Wang and R. Matal, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Wuhan, China

WEDNESDAY, OCTOBER 11, 1:00 PM—4:00 PM

AFTERNOON SESSION COFFEE BREAK (2:15-2:45)

"Bose SoundLink® Bluetooth Speaker" – drawing in Sun Room Lobby (must be present to win)

SESSION 15: COMMERCIAL APPLICATIONS, Room Sun 1-3

Chairperson: Steven A. Galan | Underwriters Laboratories, Inc., New York, USA

15-1 (1:00) Making OSP Loose Tube Armored Cable Safer, Easier, and Faster to Use – J.L. Greenwood, J.B. Dempsey, and J.L. Baucom, Corning Inc., North Carolina, USA

15-2 (1:25) Development of High Performance Low Smoke Zero Halogen Moisture Curable Cross Linked Jacket Compounds with Attractive Processability Features - J. Freestone and T.D. Getzie, SACO AEI Polymers, Wisconsin, USA; and M.E. Slevin, SACO AEI Polymers, Sandwich, United Kingdom

15-3 (1:50) Easy-e-Beam® V3 Self-Shielded Dynamitron® Electron Beam Accelerator - S. Goldfarb, IBA Industrial, Inc., New York, USA

BREAK (2:15 – 2:45)

15-4 (2:45) New High Performance Materials for Communication Cable 4.0 - F. Zelder, EVONIK Rescource Efficiency GmbH, Marl, Germany

15-5 (3:10) CIQ Software Solutions Leading to Improved Quality and Productivity Levels Can Generate Serious Gains in Profitability - M. Felder and W. Klein, AESA Cortaillod, Colombier, Switzerland

15-6 (3:35) The Effect of Thickness on Dielectric Strength in Low Voltage Compounds – P. Lorigan, T & T Marketing Inc., Pennsylvania, USA

SESSION 16: MATERIALS: FLAME RETARDANCY & ADDITIVES, Room Sun 4-6

Chairperson: Dr. Mohamad Esseghir | The Dow Chemical Company, Pennsylvania, USA

16-1 (1:00) Low-Smoke Halogen-Free Compounds Replacing Halogenated Materials in Cables (Industrial, Construction and Specialty in the Next Generation) - E.B. Lee, General Cable Corp., Indiana, USA

16-2 (1:25) Halogen Free Compound Solutions to Address Thermal Stress Cracking in Extreme Conditions - T. Artingstall, Mexichem Specialty Compounds, Leicestershire, United Kingdom; and M. Jozokos, Mexichem Specialty Compound, Massachusetts, USA

16-3 (1:50) Improved Halogen-Free Flame Retardant Wire and Cable Jacket Compound - Y. Zhang, B.I. Chaudhary, A.Ghosh-Dastidar, R. Tapper and B.D. Nguyen, The Dow Chemical Co., Pennsylvania, USA; M. Alves, Dow Chemical (Brazil), Sao Paulo, Brazil; and C. Heah, The Dow Chemical Co., Singapore

BREAK (2:15 – 2:45)

16-4 2:45) The Missing Link for 125°C Automotive Wires – Halogen Free Flame Retardant Polypropylene Solution - C. Beisert and J. Ruder, LEONI Kabel GmbH, Roth, Germany; A. Watson, Borealis Polymers NV, Mechelen, Belgium; L. Karlsson and B-A. Sultan, Borealis AB, Stenungsund, Sweden

16-5 (3:10) A Case Study of Processing HMH (Hydromagnesite/Huntite) on a Production Scale Compact Processor - P. Ye, Farrel Corp., Connecticut, USA; and S. Viering, LKAB Minereals GmbH BA Polymer & Coatings, Essen, Germany

SESSION 17: NETWORK MANAGEMENT & RELIABILITY, Room Sun C

Chairperson: Dr. Akira Murata | Fujikura Ltd., Chiba, Japan

17-1 (1:00) Optical Cable Re-Routing Operation Support System Without Service Interruption - T. Manabe, K. Noto, M. Inoue, H. Watanabe and Y. Koshikiya, NTT Corporation, Ibaraki, Japan

17-2 (1:25) End-To-End Testing of Optical Distribution Network in Access Networks without Entering Customer's Premises - K. Toge, H. Takahashi, C. Kito and T. Manabe, NTT Corp., Ibaraki, Japan

17-3 (1:50) Revisiting Link Loses: Cable cuts, Link Reliability and Emerging Markets – S. Bhaumik, P. Agarwal, P. Pardeshi, B. Gomatam, Sterlite Technologies Ltd., Aurangabad, India

BREAK (2:15 – 2:45)

17-4 (2:45) Optical Fiber Line Testing System Technologies for Various Optical Cable Networks - T. Iwadou, Y. Enomoto, Y. Kajihara and J. Onishi, NTT Corp., Ibaraki, Japan

17-5 (3:10) Operation Technology for Efficient Maintenance of Underground Optical Cable – M. Akamatsu, T. Okamoto, K. Mine and Kuniaki Uehara, NTT East, Tokyo, Japan

17-6 (3:35) Novel Outside-Facility Management Technology for Maintenance and Inspection Work Using MMS - M. Waki, T. Goto and K. Katayama, NTT Corp., Ibaraki, Japan

SESSION 18: SHORT REACH, HIGH CAPACITY OPTICAL INTERCONNECTS, Room Sun D

Chairperson: Dr. Durgesh Vaidya | OFS, a Furukawa Company, Massachussets, USA

18-1 (1:00) A Perspective on the Future of MMF – G.M. Choudhury, R. Lingle, J. Kamino, R. Shubochkin, D. Vaidya, D. Braganza, OFS, Georgia, USA

18-2 (1:25) Wideband Multimode Fiber for High Speed SWDM Systems - Y. Wu, L. Zhang, R. Huang, R. Wang, W. Xiao, Y. Liu, J. Li, J. Zhu, H. Wang and R. Wang, Yangtze Optical Fibre and Cable Joint Stock Ltd., Co., Wuhan, China

18-3 (1:50) Characterizing Differential Mode Delay Tilt and its Relationship to the Effective Modal Bandwidth of Multimode Fibers as a Function of Wavelength - A. Novick, B. Kose, J.M. Castro, R. Pimpinella, P. Huang, A. Berian and B. Lane, Panduit Corp., Illinois, USA

BREAK (2:15 – 2:45)

18-4 (2:45) Method to Improve the Accuracy of Bandwidth Measurements for OM5 Fiber - E.R. Parsons, R.L. Patterson, P.B. Kidd and G.M. Irwin, CommScope, Inc., Texas, USA

18-5 (3:10) Performance Analysis of VCSEL Based Wavelength Division Multiplexing over OM3, OM4 and OM5 Fiber Infrastructure - M. Dodds and R. Sambaraju, Nexans, Pennsylvania, USA

18-6 (3:35) High Speed Short Reach Optical Interconnect over OM4 and OM5 Multimode Optical Fiber – Y. Sun, A. Swartz, J. Kamino and R. Lingle, OFS, Georgia, USA; R. Shubochkin and D. Braganza, OFS Massachusetts, USA

CONFERENCE INFORMATION

ON-SITE REGISTRATION SCHEDULE

Registration will be held at the Gaylord Palms Resort and Convention Center during the following hours:

Saturday	October 7, 2017	3:00 pm to 6:00 pm
Sunday	October 8, 2017	7:00 am to 5:00 pm
Monday	October 9, 2017	6:00 am to 6:00 pm
Tuesday	October 10, 2017	7:00 am to 6:00 pm
Wednesday	October 11, 2017	7:00 am to 3:00 pm

All conference attendees must register and obtain a badge. Badges must be worn for access to all IWCS events.

Dress Code: Business Casual

Pictures (camera/cell phone), Videotaping or electronic recording during this conference is not permitted in the Technical Sessions

EXHIBIT HALL SCHEDULE

(Exhibit Hall A)

All Registered Attendees

Monday	October 9, 2017	2:00 pm to 6:00 pm
Tuesday	October 10, 2017	11:00 am to 1:30 pm
Tuesday	October 10, 2017	3:30 pm to 6:00 pm

HOSPITALITY RECEPTION MONDAY

Co-Sponsored with WCISA (www.wcisaonline.org)

Special Recognition to Scholarship Recipients and Colleagues New to our W&C Industry!

(Coquina Lawn)

6:00 to 7:30 pm

LUNCH

Sunday, October 8, 2017, Miami Meeting Room

Professional Development Course Instructors & Students Only with Badge & Course Ticket:12:00noon—1:00pm

Monday, October 9, 2017, Osceola Ballroom B

Plenary Session – Registered Technical Symposium attendees only (seats are limited).

SPEAKER'S / INSTRUCTOR'S ORIENTATION BREAKFAST

On the day of your presentation, you are required to attend a Speaker's Orientation Breakfast as follows:

Professional Development Course Instructors Only: Sunday (7:00 to 8:00 am) – **Miami Meeting Room**

Session Speakers: Monday through Wednesday (7:00 to 8:00 am) – **Miami Meeting Room**

During breakfast, you will have the opportunity to meet with your Session Chairperson to review the procedures for your presentation.

A group photo of the Session presenters with the Chairperson will be taken for our IWCS Archives. Speakers will be directed to the Session room where you can review your PowerPoint® presentation.
Note: No presentations will be uploaded onsite without the permission of your Session Chairman.

NEXT YEAR'S DATES

IWCS 2018 International Cable & Connectivity Symposium

October 14-17, 2018

Rhode Island Convention Center

Providence, Rhode Island, USA

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PARTNER LEVEL

Cable Components Group (CCG) designs, engineers and manufactures extruded products for wire and cable, fiber optic cables and industrial non-wovens for filtration. CCG's 6-LAN™ crosswebs are foamed and include patented designs for Category 6, 6e, and 6A LAN cables. CCG compounds FluoroFoam®, a patented chemical foaming agent of fluorinated ethylene propylene (FEP) for use in insulations, tapes and 6-LAN crosswebs. Foamed fluorine-based products are particularly suited for the evolving Power Over Ethernet (POE) standards. These standards require enhanced thermal stability materials and foamed FEP insulation offers a safety margin with a 200°C rating. CCG is now vertically integrated and is focusing on compounding fire retardant and foamable materials for both in-house extrusion and for sale as compounded pellets designed for copper wire & cable and fiber optic cabling. The newly installed equipment includes two Buss Kneaders and two twin-screw compounding lines. The following fluor-opolymers (FEP, MFA, PFA, ECTFE, ETFE and PVDF), polyolefins (FRPP, FRPE, LSHFPP and LSHFPE), and engineered resins (PEEK, PPS, PSU, PPSU and PES) are the focus of CCG's material development and innovation pipeline.

We are a world leader in titanium technologies, fluoroproducts and chemical solutions. We are a new company with over 200 years of history, created from the DuPont performance chemicals businesses.

CommScope is a global leader in connectivity solutions for communications networks. We provide infrastructure solutions for wireless, business enterprise, residential broadband and carrier wire line networks with industry-leading brands such as Andrew®, SYSTIMAX® and HELIAX®. Founded in Hickory, North Carolina more than 30 years ago, CommScope and its worldwide team of more than 13,000 employees create infrastructure solutions for communications networks in more than 130 countries.

With more than 160 years of science and engineering knowledge, Corning Incorporated creates keystone components for high-technology systems in consumer electronics, mobile emissions control and life sciences. Our Optical Communications segment delivers connectivity to every edge of the network, from optical fiber, cable, hardware & equipment to fully-optimized solutions.

Dow Electrical & Telecommunications, a supplier of insulation and jacketing materials to the telecommunications industry for over 40 years, is growing and diversifying through its unique capability to translate end-user unmet needs into tangible material science solutions.

Royal DSM is a global science-based company active in health, nutrition and materials. By connecting its unique competence in Life Sciences and Materials Sciences DSM is driving economic prosperity, environmental progress and social advances to create sustainable value for all stakeholders simultaneously.

DSM Functional Materials, operating as a Business Unit within the Performance Materials cluster of Royal DSM N.V., is a leading developer of high-performance functional coatings and composite materials. Our portfolio includes DeS-olite® and Cablelite® UV-curable coatings, inks and matrix materials for the manufacture of optical fiber and cable, and Somos® materials for additive manufacturing,. DSM and its associated companies deliver annual net sales of about €10 billion with approximately 25,000 employees. The company is listed on Euronext Amsterdam.

The Lapp Group first established in Stuttgart, Germany has been a manufacturer of Wire and Cable since the company's inception over 50 years ago. Since that time, the Lapp Group grown through their worldwide locations to accommodate customers on a global scale. As evidenced by their several testing laboratories the Lapp groups dedication to research and development has established them as the global innovator to the wire and cable industry.

Lapp products are used throughout the world in automotive plants, machine tools, instrumentation, medical electronics, telecommunications, robotics, industrial automation, transportation, general industrial control systems, and numerous other applications.

Developer and manufacturer of compounds including specialty vinyl alloy SMOKEGUARD®, halogen-free MEGO-LON®, and thermoplastic elastomer (vinyl, olefinic, styrenic) GARAFLEX®. Manufacturing sites in the US, UK, Mexico and Columbia.

A Furukawa Company

OFS is a world-leading designer, manufacturer and provider of optical fiber, optical fiber cable, FTTX, optical connectivity and specialty photonics products. Our manufacturing and research divisions work together to provide innovative products and solutions that traverse many different applications as they link people and machines worldwide. Be-tween continents, between cities, around neighborhoods, and into homes and businesses of digital consumers we provide the right optical fiber, optical cable and components for efficient, cost-effective transmission.

OFS's corporate lineage dates back to 1876 and includes technology powerhouses such as AT&T and Lucent Technologies (now Alcatel-Lucent). Today, OFS is owned by Furukawa Electric, a multi-billion dollar global leader in optical communications.

Headquartered in Norcross (near Atlanta) Georgia, U.S., OFS is a global provider with facilities in Denmark, Germany, Russia and the United States.

Prysmian Group is world leader in the energy and telecom cables and systems industry. With sales of some 7 billion (pro-forma 2010 Prysmian/Draka) and 22,000 employees across 50 countries and 98 plants, the Group is strongly positioned in high-tech markets and provides the widest range of products, services, technologies and know-how. In the Energy sector, Prysmian Group operates in the business of underground and submarine power transmission cables and systems, special cables for applications in many different industrial sectors and medium and low voltage cables for the construction and infrastructure industry. In the Telecom sector, the Group manufactures cables and accessories for the voice, video and data transmission industry, producing optical fibres, optical cables and connectivity. Prysmian is listed on the Milan Stock Exchange in the Blue Chip index.

Human Chemistry, Human Solutions

Teijin Aramid is the leading global supplier to the OFC market of aramid reinforcement fiber solutions. The product portfolio includes a versatile high modulus aramid fiber product line, a waterblocking high modulus aramid fiber prod-uct line and a range of aramid ripcords and binder yarns. Teijin Aramid works closely with our partners in the industry to arrive at the most cost-effective and reliable solutions. Teijin Aramid is now introducing the new ultra high modulus Twaron UP D3200 product for ADSS OFC applications. In addition, a superior HMPE tape product, Endumax, with exceptional dimensional stability is launched is launched for reinforcement of small diameter premises and indoor OFCs.

Teknor Apex Company, a supplier of thermoplastic compounds to the wire and cable industry offers a full range of RoHS-complaint, UL-Recognized extrusion and molding compounds.

Underwriters Laboratories has the expertise, testing capability, brand recognition and global presence needed to provide a full portfolio of wire and cable testing services for Fire Safety, Performance Verification, Component Cabling and Compound Performance to the industry. Our investigation services are supported by one of the most comprehensive Follow-Up Programs in the third-party certification industry that helps users, specifiers, distributors and manufacturers identify cabling products that meet nationally recognized safety requirements as well as industry specifications for performance and quality.

YOFC is the largest supplier of optical preform, fiber and cable in the world. YOFC produces and sells a variety of standard optical fibre preforms, optical fibres and optical cables widely used in communications industry. In addition, YOFC designs and customizes special optical fibre and cable specified by customers, including integration systems, engineering design and services. The company serves sectors such as utilities, transportation, petrochemical and health care. It provides quality products and services in more than 60 countries around the world. Since it formally went into operation in 1992, its production and sales of optical fibre and cable products has ranked first in China for 24 consecutive years and constantly performs in the top three among global optical fibre and cable manufacturers

PLATINUM LEVEL

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Listen. Create. Deliver.

Web Industries is a global leader in specialty film extrusion and a pioneer in producing foamed and fibrillated tapes. Our wire and cable product portfolio includes the SuperBulk® cable filler family as well as identification, isolation, and binder tapes. We use our proprietary systems and best-practice methodologies to deliver high-quality, next-generation cable components that are found in some of the world's most advanced wire and cable products. We combine end-to-end design, development, converting, and manufacturing services with innovative thinking and creative problem solving to help our partners speed products to market, reduce costs, and maximize product success.

WCISA®
Wire and Cable Industry Suppliers Association®

WCISA® · Wire and Cable Industry Suppliers Association® - is a nonprofit corporate membership association with over 100 North American suppliers of machinery, materials and accessories used for making all types of wire and cable. WCISA is a co-sponsor of the IWCS Reception and the IWCS "Wire & Cable Industry Student Scholarship Fund" at Renssalaer Polytechnic Institute and Georgia Institute of Technology. WCISA members are based in or have an established subsidiary in North America. WCISA's mission is to promote its member's products and services by providing its members with representation, networking/social opportunities and services at wire and cable trade events and conferences. WCISA is active in wire and cable trade events and conferences throughout the world, in varying capacities, including as an exhibitor, supporter, sponsor and outing organizer. WCISA also awards to scholarships to employees and dependents of member companies as well as partner associations. WCISA details are available at www.wcisaonlin.org, and WCISA membership inquires can be sent to info@wcisaonline.org.

Wire & Cable Technology International

Wire & Cable Technology International, the Official Magazine of the IWCS Conference™, is a leading worldwide technical magazine, covering the production, processing and use of communications, electrical and mechanical wire and cable. The magazine is published six times per year, in both print and digital editions, and it is distributed to wire and cable industry professionals in more than 100 countries. Additional publications include the Buyer's Guide and the OVERVIEW newsletter. Visit www.wiretech.com for details.

GOLD LEVEL

Heraeus

Heraeus Noblelight America is the leading supplier of UV curing systems for optical fiber, wire and cable manufacturing worldwide. Heraeus' modular microwave-powered UV lamp technology is recognized for its stability and long operational life, making it ideal for these demanding applications. Heraeus' DRF/DRC lamp systems have been designed specifically for optical fiber, coloring, ribbon, wire and cable manufacturing with the patented back reflector housing. And Heraeus' VAM mounting systems enable the precise alignment of multiple in-line lamps such as those installed on a fiber drawing tower. Heraeus' experience in curing systems for the optical fiber and cable industry is unmatched.

Heraeus Noblelight GmbH with its headquarters in Hanau and with subsidiaries in the USA, Great Britain, France, China and Australia, is one of the technology- and market-leaders in the production of specialty light sources and systems. In 2015, Heraeus Noblelight had an annual turnover of 158.3 Million and employed 828 people worldwide. The organization develops, manufactures and markets infrared and ultraviolet emitters, systems and solutions for applications in industrial manufacture, environmental protection, medicine and cosmetics, research, development and analytical measurement techniques.

HITACHI
Inspire the Next

Hitachi Cable America, Inc., (Hitachi) located in Manchester, New Hampshire, U.S.A., is a leader in the manufacture of high-performance communication cables for applications such as 10-Gigabit Ethernet, Industrial Ethernet, DAS, VOIP, POE, CCTV, robotics and WiFi. Cables are designed and built for a variety of applications and environments such medical, industrial, educational, military, oil & gas, mining and other harsh environments. Product customization is also available.

MILTEC UV

Miltec UV is the leading manufacturer of high performance UV curing systems and spare parts used in optical fiber draw towers for coating, coloring, and cable marking. For over 20 years, we have provided the industry with superior quality and service, fulfilling the needs of both domestic and international markets.

LEONI

LEONI is a global supplier of wires, optical fibers, cables and cable systems as well as related services for the auto-motive sector and further industries. LEONI develops and produces technically sophisticated products from single-core automotive cables through to complete wiring systems. LEONI's product range also comprises wires and strands, standardized cables, special cables and cable system assemblies for various industrial markets. The group of companies, which is listed on the German MDAX, employs about 75,000 people in 32 countries and generated consolidated sales of EUR 4.5 billion in 2015.

SICCET
Your Special Cables Solutions

Siccet is a family run business in Northern Italy that produces special cables. It was founded in 1977 and over the years thanks to continuous innovation in production processes and investing in research into new materials, it has become established and grown as a reliable, flexible, dynamic and always customer oriented company, providing the most suitable and best service solution.

Focus has always been on the high-quality production of thermocouple cables, compensating/extension cables and RTD cables. The experience gained in such critical fields of application, allowed Siccet to expand its production of special cables over time into other areas where critical environments require high performance (e.g. the energy sector and Oil & Gas).

T&T MARKETING, INC.

T&T Marketing is a single source distributor to wire and cable manufacturers. Being a stocking distributor allows T&T to provide just in time deliveries, typically one to two days. T&T offers a range of products including: PVC, polyethylene, TPU, TPE, Santoprene™, fluoropolymers, EVA, CPE, flooding and filling water-blocking compounds, EPDM, tapes, copper conductors, LSZH compounds and Nylon 6. T&T represents 14 world class suppliers: AGC, Axiall, Borealis, Electric Cable Compounds, Firestone, Hanwha, Huaxia, Huntsman, Lake Copper Conductors, Exxon Mobil, S&E Specialty Polymers, T&T Compounding, Unigel and Unitape. T&T also provides extensive technical service via its polymer testing lab facility to support customer processing needs and provide analysis of wire samples and screenpacks. T&T lab technicians conduct R&D work to meet specific customer needs.

WONDERFUL

Wonderful Hi-Tech is headquartered in Taiwan, with 10 manufacturing sites across China, Thailand and Vietnam, and sales offices in Asia, North America and Europe. Established in 1978, Wonderful Hi-Tech has become one of the leading manufacturers and providers of electronic wire and cable in Taiwan. In our second stage of development from 1995 to 2000 we committed strong investments in the area of LAN cable and RF coaxial cable technology. We have subsequently obtained global Cat 6A and Cat 7A certifications. Our products have been certified by numerous international standards agencies, with Wonderful Hi-Tech becoming a leading global cable supplier. We serve you with the highest sincerity, continuing to improve the quality of our production and developing new products, so as to prosper and grow with you.

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