

**SID VEHICLE DISPLAYS AND INTERFACES 2018**  
**25<sup>th</sup> ANNUAL SYMPOSIUM & EXPO**  
**PROGRAM**

September 25-26, 2018  
Burton Manor Conference Center  
Livonia, MI

**TUESDAY, SEPTEMBER 25, 2018**

7:30 – 8:30 am      **REGISTRATION AND REFRESHMENTS**

9:00 am – 5:00 pm   **TABLETOP EXHIBITS OPEN**

8:30 – 9:00 am      **Welcoming Remarks**  
**25<sup>th</sup> Anniversary Presentation**  
**Local SID Chapter Awards**  
Bob O'Brien, *Display Supply Chain Consultants, Ann Arbor, MI, USA*  
Silviu Pala, *Automotive Display, Southfield, MI, USA*

9:00 – 9:45 am      **KEYNOTE ADDRESS**  
**Voice of the Customer: Displays as a Trust Enabler**  
Kristin Kolodge, Executive Director of Driver Interaction and Human  
Machine Interface (HMI)  
*J.D. Power, Troy, MI, USA*

9:45 – 10:00 am     **Refreshment Break**

**SESSION 1: AUTOMOTIVE MARKET (10:00 – 11:00 am)**

*Co-Chairs:*      Silviu Pala, *Automotive Display, Southfield, MI, USA*  
                         Michael Boyd, *Yazaki North America, Canton, MI, USA*

10:00 – 10:20 am     **INVITED ADDRESS**  
**1.1                    Evolving Technologies and Supply Chain in**  
**Automotive Display Segments**  
Brian Rhodes, *IHS Markit, Southfield, MI, USA*

10:20 – 10:40 am     **INVITED ADDRESS**  
**1.2                    Automotive Touch, Touchless Control, Advanced Display and Smart**  
**Windows Market Forecast**  
Jennifer Colegrove, *Touch Display Research, Inc., Santa Clara, CA, USA*

10:40 – 11:00 am     **INVITED ADDRESS**  
**1.3                    Global Display Industry Markets and Technologies**  
Bob O'Brien, *President*  
*Display Supply Chain Consultants, Ann Arbor, MI, USA*

**SESSION 2: EXHIBITOR PRESENTATIONS (11:00 am – 12:30 pm)**

*Co-Chairs:* Bruce Banter, *Tech-D-P Inc., Northville, MI, USA*  
Eric Miciuda, *Continental Corporation, Auburn Hills, MI, USA*

12:30 – 2:00 pm      **LUNCH**

**SESSION 3: Poster Presentations (2:00 – 2:45 pm)**

*Chair:* David Lambert, *Panasonic, Newark, NJ, USA*

- P.1      New Grade of Automotive Optically Clear Adhesives to Enable Future Applications**  
Olivier Wang and William Edmonds, *3M, St. Paul, MN, USA*
- P.2      UV-durable, Water Repellent Coatings for Automotive Applications**  
Yoshiaki Honda, Hisashi Mitsuhashi, Masatoshi Nose, *Daikin Industries, LTD., Osaka, Japan*  
  
Chad Meserole, *Daikin America, Inc., Decatur, AL, USA*
- P.3      Improvement the Automotive-Photo-Alignment Image Sticking by Optimizing the Crosslinking of Alignment Layer**  
Zhongyi Wan, Jiandong Wang, Fan Tian, Xiongping Li, *Tianma Corporation, Shanghai, China*
- P.4      Polyurethane OCA Suitable for Optical Bonding with Plastic Cover Materials**  
Yuki Yabuta, *BANDO Chemical Industries, Ltd., Tokyo, Japan*
- P.5      Anti-Reflective Films for Vehicle Displays Application**  
Nizamidin Jappar, Hideki Etori, Tetsuhiro Sasagawa, *Kimoto Tech, GA, USA*

2:45 – 3:00 pm      **Refreshment Break**

**SESSION 4: New Display Solutions (3:00 – 6:00 pm)**

*Co-Chairs:* Bob O'Brien, *Display Supply Chain Consultants, Ann Arbor, MI, USA*  
Jerzy Kanicki, *University of Michigan, Ann Arbor, MI, USA*

3:00 – 3:20 pm      **Carbon Fiber TIM Thermal Solution Investigation  
4.1 for Maximizing System Power**

Hiroyuki Ryoson and Sergey Bolotov, *Dexerials Corporation, Shimotsuke, Tochigi, Japan*

Robert Wilder and Jingting Wu, *Dexerials Corporation, San Jose, CA, USA*

Pengwei Sun and Brian Chu, *Infineon Technologies AG, El Segundo, CA, USA*

Alfred Hesener, *Infineon Technologies AG, Munich, Bavaria, Germany*

- 3:20 – 3:40 pm  
**4.2**                    **Advanced Performance of a-Si TFT-LCD Display for High-Standard Automotive Applications**  
Baosheng Feng, Yongli Yao, Jiandong Wang, Fan Tian, Meilin Wang, Xiongping Li, *Tianma Corporation, Shanghai, China*
- 3:40 – 4:00 pm  
**4.3**                    **Effects of a-Si TFT's Leakage Current on Vehicle Image Sticking**  
Fucheng Lv, Wenjun Dai, Jiandong Wang, Yang Yu, Meilin Wang, Fan Tian, Xiongping Li, *Tianma Micro-Electronic Group, Shanghai, China*
- 4:00 – 4:20 pm  
**4.4**                    **Requirements on the Characterization of Optical Display Attributes for Automotive Applications**  
Ingo Rotscholl and Udo Kruger, *TechnoTeam Bildverarbeitung GmbH, Ilmenau, Germany*
- 4:20 – 4:40 pm  
**4.5**                    **A-Si TFT LCDs Freeform Design for Automotive Application**  
Shumian Xu, Wenjun Dai, Meilin Wang, Chuanzhi Xu, Gang Qin, Fan Tian, Xiongping Li, *Tianma Micro-Electronics Group, Shanghai, China*
- 4:40 – 5:00 pm  
**4.6**                    **Advanced Compensation Technology for AMOLED Automotive Displays**  
Shuenn-Jiun Tang and Junhu He, *Ignis Innovation Inc., Waterloo, Ontario, Canada*
- 5:00 – 5:20 pm  
**4.7**                    **Mini-LED Enhanced High Dynamic Range LCD for Automotive Displays**  
Yuge Huang, Guanjun Tan, Shin-Tson Wu, *College of Optics and Photonics, University of Central Florida, Orlando, FL, USA*
- 5:20 – 5:40 pm  
**4.8**                    **The Materials and Process for Curved Automotive Displays**  
Takeshi Mori, *SCREEN Laminatech Co., Ltd., Osaka, Japan*
- 5:40 – 6:00 pm  
**4.9**                    **Hard Coated Plastic Film for Cover Lens of Flat and 3D Shape Display**  
Shintaro Ozaki, *Riken Technos Corp., Tokyo, Japan*

**SESSION 5: Featured Speaker Followed by Open Audience Interaction**

*Moderator:*    Bob O'Brien, *Display Supply Chain Consultants, Ann Arbor, MI, USA*

- 6:00– 7:15 pm            **Design of Automation Behavior and Interfaces in Support of Human-Machine Teaming**  
Dr. Nadine Sarter, *University of Michigan, Ann Arbor, MI, USA*

- 7:30 – 10:00 pm        **Optional Dinner at Burton Manor**  
**Additional Charge (See Registration Form)**

## **WEDNESDAY, SEPTEMBER 26, 2018**

7:30 – 8:00 am **REGISTRATION AND REFRESHMENTS**

9:00 am – 2:00 pm **TABLETOP EXHIBITS OPEN**

### **TUTORIAL (8:00 -8:30 am)**

8:00 – 8:30 am **Spectral Factors Influencing Visibility and Appearance of Automotive Displays**  
John Bullough, *Director of Transportation and Lighting Systems, Lighting Research Center, Rensselaer Polytechnic Inst., Troy, NY, USA*

### **SESSION 6: METROLOGY (8:30 -10:10 am)**

*Co-Chairs:* Kimberly Peiler, *OSRAM Opto Semiconductors, Inc., Novi, MI, USA*  
Vyacheslav Birman, *Continental Corporation, Auburn Hills, MI, USA*

8:30 – 8:50 pm **Metrological Challenges of Curved Displays**  
**6.1** Martin Wolf, Michael Becker, Jürgen Neumeier, *Instrument Systems GmbH, Munich, Germany*

8:50 – 9:10 am **Border Fade Pattern for a Segmented Active Polarizer Dimmable Lens**  
**6.2** Brian Hayden, Paul Weindorf, Elijah Auger, *Visteon Corporation, MI, USA*  
Pedro Coutino Soto, *AlphaMicron Inc., Kent, OH, USA*

9:10 – 9:30 am **Comprehensive Display Measurement**  
**6.3** Kevin Lange, *Konica Minolta Sensing Americas Inc., Ramsey, NJ, USA*  
Michael Becker, *Instrument Systems GmbH, Munich, Germany*

9:30 – 9:50 am **Understanding and Applying Standards-Based Display Testing for Camera Monitor Systems**  
**6.4** Matt Scholz, *Radiant Vision Systems, Redmond, WA, USA*

9:50 – 10:10 am **Influence of the Top Polarizer of a Vehicle Display on its Performances Under Variable Illumination Conditions**  
**6.5** Pierre Boher and Theirry Leroux, *ELDIM, Hérouville St. Clair, France*

10:10 – 10:20 am **Refreshment Break (Tabletop Exhibits Open)**

## **SESSION 7: Touch/Driver Interface (10:20 am – 11:40 am)**

*Co-Chairs:* Bruce Banter, *Tech-D-P Inc., Northville, MI, USA*  
Drew Harbach, *Paccar, Denton, TX, USA*

10:20 – 10:40 am **7.1** **Touch and Display Integration for Human Interfaces in Automotive Vehicles**

Petr Shepelev and John Brady, *Synaptics Inc., San Jose, CA, USA*

10:40 – 11:00 am **7.2** **Linear Correlating Infrared Touch Screens**

Rob McCulloch, Guy Duxbury, Albert David, *A D Metro, Ottawa, Ontario, Canada*

11:00 – 11:20 am **7.3** **Bringing Conformable Plastic OLCs to Car Interiors – Benefits and Manufacturing**

Simon Jones, *FlexEnable Ltd., Cambridge, UK*

11:20 am – 11:40 am **7.4** **Localized Haptic Feedback under Flexible Displays for Vehicle Mechanical Button Replacement**

Cesar Ocampo Mesut Eraslan, Mukulvarma Penmatcha, Kevin Yeap, Alfredo Garcia, Hetal Savaliya, Lipika Bhattacharya, Dheeraj Kurada, Bryce Bingham, Karthik Nagendran, Charles Alexander, Sudeep Sharma, Curtis Bradford, *Flex Innovation Labs, Milpitas, CA, USA*

11:40 – 1:30 pm **LUNCH**

## **SESSION 8: HUD (1:30 pm – 2:50 pm)**

*Co-Chairs:* Ross Maunders, *FCA USA LLC, Auburn Hills, MI, USA*  
Dan Cashen, *DAQRI, Rochester Hills, MI, USA*

1:30 – 1:50 pm **8.1** **EviyOS® Technology for Automotive Exterior Projection**

Kevin Kruse, David Rousseau, Kimberly Peiler, *OSRAM Opto Semiconductors Inc., Novi, MI, USA*

1:50 – 2:10 pm **8.2** **Manufacturing of Transparent Holographic Components for Heads Up Display Applications**

Stanley Kao, Juan Russo, Seth Coe-Sullivan, Fedor Dimov, Martin Sanchez, *Luminit LLC, Torrance, CA, USA*

2:10 – 2:30 pm **8.3** **Study of Thermal Management Solutions for Head-Up Displays**

Steve Pankratz, *3M, St. Paul, MN, USA*

2:30 – 2:50 pm **8.4** **Opportunities and Challenges to Achieve a Cluster-less Vehicle Through the Use of a HUD Only Implementation**

Joseph Pullukat and Shinichi Tanaka, Applications Engineering Department NS International, Ltd., Troy, MI, USA

**SESSION 9: OPTICAL ADHESIVES/FILMS (2:50 pm – 4:30 pm)**

*Co-Chairs:* Ross Maunders, *FCA USA LLC, Auburn Hills, MI, USA*  
Mark Larry, *Ford Motor Company, Detroit, MI, USA*

**9.1 WITHDRAWN**

2:50– 3:10 pm **9.2 Anti-Reflection Films for Displays on Glossy Piano Black Interior and Curved Surfaces**

Jingting Wu, *Dexerials America Corporation, San Jose, CA, USA*  
Toyoshima Tadaaki, *Dexerials Corporation, Shimotsuke, Tochigi, Japan*

3:10– 3:30 pm **9.3 Direct Lamination Reflective Polarizers: Improved Vehicle Display Performance**

John Van Derlofske, Sandy Chen, Shelly Toy, Matt Philippi,  
*3M, St. Paul, MN, USA*

**9.4 WITHDRAWN**

3:30– 3:50 pm **9.5 Ultra-Thin Cu-Doped Ag for Flexible Transparent Electrodes Featuring High Transmission and Stabilities**

Chengang Ji, 2017 Academic Award Recipient, *University of Michigan, Ann Arbor, MI, USA*

Cheng Zhang, Qingyu Cui, Zhong Zhang, L. Jay Guo, *University of Michigan, Ann Arbor, MI, USA*

Heyan Wang and Zhengang Lu, *Harbin Institute of Technology, Harbin, China*

Jianhua Wu and Yue Yan, *Beijing Institute of Aeronautical Materials, Beijing, China*

3:50– 4:10 pm **9.6 oDLC Coatings on Infotainment Displays**

Paul Markoff Johnson, *Intevac, Inc., Santa Clara, CA, USA*

4:10– 4:30 pm **9.7 Active Circular Polarizer OLED E-Mirror**

Paul Weindorf, Qais Sharif, Elijah Auger, Brian Hayden,  
*Visteon Corporation, MI, USA*

Pedro Coutino Soto, *AlphaMicron Inc., Kent, OH, USA*