

SID VEHICLE DISPLAYS AND INTERFACES 2018
25th 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**
25th 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 – 9:00 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 **Touch and Display Integration for Human Interfaces in Automotive Vehicles**
7.1

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

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

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

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

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

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

Mesut Eraslan, Mukulvarma Penmatcha, Kevin Yeap, Cesar Ocampo, 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 **EviyOS® Technology for Automotive Exterior Projection**
8.1

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

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

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

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

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

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

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

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

3:30– 3:50 pm **9.4 Evaluation of Cover Glass Surface Treatment Options for Auto Interior Displays**

Antoine Lesuffleur and Cheng-Chung Li, *Corning Incorporated, Corning, NY, USA*

3:50– 4:10 pm **9.5 Ultra-Thin Cu-Doped Ag for Flexible Transparent Electrodes Featuring High Transmission and Stabilities**

Chengang Ji, 2017 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*

4:10– 4:30 pm **9.6 oDLC Coatings on Infotainment Displays**

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

4:30– 4:50 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*