## The Technical Papers Program

### The Keynote Papers

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- Digital Printing/Quality Control Instrumentation: xi, 83
- Media for Digital Printing: xii, 107
- Focused Session on Image Permanence: xiii, 159
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- Production Digital Printing: xvi, 263

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- Ink Jet Processes: xvii, 278
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- Textile and Fabric Printing: xxi, 418
- Color Science and Image Processing: xxii, 442
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- Focused Session on Electronic Paper and Paper-like Display: xxiv, 515
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- Print and Image Quality: xxx, 705

### Interactive Sessions

- Tuesday
  - Advanced and Novel Imaging Systems: xxx, 739
  - Optoelectronic Imaging Materials and Devices: xxxi, 760
  - Color Science and Image Process: xxxii, 780
  - Print and Image Quality: xxxii, 808
  - Digital Printing/Quality Control Instrumentation: xxxiii, 830
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The Papers Program

The Keynote Papers

8:00 am to 9:00 am


Tuesday: The Power of Print: Evolution of Print Media Production through Digitalization, Innovations, Electronic Media and Market Demand, Helmut Kipphan, Heidelberger Druckmaschinen AG (Germany)

Wednesday: The Future of Paper, M. Bruce Lyne, International Paper (USA)

Thursday: Decolorable Ink, Kenji Sano, Toshiba Corporation (Japan)

Track 1

Monday, October 1, 2001

Printing Systems Engineering/Optimization
Session Chair(s): Peter Mason, Torrey Pines Research; Edward Caruthers, Xerox Corporation; Peter Bracke, Barco Graphics

Monday, October 1 — 9:20 to 11:40 am

9:20 am Focal Paper: High Throughput Industrial Digital Printing
Peter Bracke, Barco Graphic, nv (Belgium)

9:50 am UV Curing of Ink Jet Printing
R. W. Stowe, Fusion UV Systems, Inc. (USA)

10:10 am Design and Implementation of a DSP Based Inkjet Printer Motion Control System for Dynamic Print Mode Control
A. V. Deshpande, M. Kamasak, G. T. -C. Chiu, K. L. Thoon, C. A. Bouman, J. P. Allebach, Purdue University (USA)
S. Fedigan, D. Schafer and C. Cole, Texas Instruments (USA)

10:30 am Coffee Break

11:00 am The Ink Cartridge as a Major Component of an Inkjet System
Joachim Kretschmer, Pelikan Hardcopy Production AG (Switzerland)
Designing and Optimizing an Ink Cartridge for Use with Higher Viscous Inks, Henning Frunder, Uli Haeutle, Hermann Kilb, and Gerhard Lohrmann, Tally Computerdrucker GmbH (Germany)

Lunch Break (on your own)

Printing Systems Engineering/Optimization (Continued)
Session Chair(s): Peter Mason, Torrey Pines Research; Edward Caruthers, Xerox Corporation; Peter Bracke, Barco Graphics

Monday, October 1—1:10 to 3:20 pm

1:10 pm Focal Paper: Using Maintenance Strategy to Improve the Availability of Complex Systems, John P. King and John R. Thompson, Heidelberg Digital, L.L.C. (USA)

1:40 pm Banding Artifact Reduction in Electrophotographic Processes Using OPC Drum Velocity Control, Cheng-Lun Chen, George T.-C. Chiu, and Jan P. Allebach, Purdue University (USA)

2:00 pm Optimizing Paper Picking Capability; Light Weight & High Speed
Peter J. Wood, Steve Zalaznik and Jay Peterson, Check Technology Corporation (USA)

2:20 pm The Expanding Roll of Semi-Conductive Polyurethane in Electro-Photographic Systems, Charles J. Matteliano, Winfield Industries, Inc. (USA)

2:40 pm Dynamic Print Modes Control for Inkjet Printers
Mustafa Kamasak, Anand V. Deshpande, Kok Leong Thoon, Charles A. Bouman, George T.-C. Chiu, and Jan P. Allebach, Purdue University (USA)

3:00 pm Integrated Architecture for Ink-Jet Printer
Denis Genon-Catalot and Cyril Schlemer, Plateforme Technologique de Valence, Université Pierre Mendès (France)

3:20 pm Coffee Break

Digital Printing/Quality Control Instrumentation
Session Chair(s): Allen Rushing, LogLight Designs; Alan Hudd, Xennia; Yasushi Hoshino, Nippon Institute of Technology

Monday, October 1 —3:40 to 5:30 pm

3:40 pm Focal Paper: Better Products Faster - Demonstration of a Novel Technique for Characterization and Quantification of Inkjet Performance
James Fox, Xennia Technology Ltd. (United Kingdom)

* Paper not available at time of publication
4:10 pm  Use of Analytical Techniques to Characterize the Stability of Difficult Ink Jet Pigmented Systems, Kristian Sime and Phil Bentley, Xennia Technology Ltd. (United Kingdom)

4:30 pm  Characterization of Semi-Insulating Devices for Electrophotography with Corona Charging Current Measurements, Inan Chen and Ming-Kai Tse, Quality Engineering Associates (QEA), Inc. (USA)

4:50 pm  Electrical Characterization of the Transfer Belt Tsuneo Mizuno and Jun-ichi Hanna, Tokyo Institute of Technology (Japan)

5:10 pm  Evaluation of an LED Printer and Printhead Using Print Quality Analysis Luo Cheng, David Forrest, and Ming-Kai Tse, Quality Engineering Associates (QEA) Inc. (USA)

Tuesday, October 2, 2001

Media for Digital Printing
Session Chair(s): Vera Bares, Weyerhaeuser; Axel Niemoeller, Sihl; Takao Abe, Konica Corp.

Tuesday, October 2 — 9:20 to 11:40 am

9:20 am  Focal Paper: Comparison of Print Characteristics of Wide Format Photograde Ink Jet Papers, M. Graindourze, H. Kanora, S. Lingier, and G. Desie, Agfa-Gevaert N.V. (Belgium)

9:50 am  Gloss of Ink Jet Media at High Ink Loads Tom Graczyk and Shailesh Mody, Arkrwright, Inc. (USA)

10:10 am  The Influence of Silica Gel Pigment Levels in Coated Ink Jet Papers David C. Darwin and R. Trevor Taylor, Grace Davison (USA) and Philip J. Press, Philip Press Statistical Consulting, Inc. (USA)

10:30 am  Coffee Break

11:00 am  Inkjet Printing: Effect of Paper Properties on Print Quality Gérard Baudin and Eliane Rousset, Ecole Française de Papeterie et des Industries Graphiques (France)

11:20 am  Comparison of Ink Jet Media for Drop-on-Demand Piezo Ink Jet Contract Proofing, M. Graindourze and E. Dutoit, Agfa-Gevaert N.V. (Belgium)

Lunch Break (on your own)
Media for Digital Printing (Continued)
Session Chair(s): Vera Bares, Weyerhaeuser; Axel Niemoeller, Sihl; Takao Abe, Konica Corp.

Tuesday, October 2 — 1:00 to 3:50 pm

1:00 pm  
**Focal Paper: Wettability Characterization of Printing Substrates:**  
Facts and Interpretations, Abraham Marmur, Chemical Engineering Dept., Technion - Israel Institute of Technology (Israel)

1:30 pm  
The Future Potential of the Cast Coating Process  
Gerd Papier, Andre Becker, and Olaf Friederichs, Zanders Feinpapiere AG (Germany)

1:50 pm  
Silica Filler for Ink Jet Paper,  
Kenji Fukunaga, Kenichi Ishizu and Hiroya Yamashita, Tokuyama Corporation (Japan)

2:10 pm  
Effect of Paper Properties on Print Quality of Inkjet Printer  
Swati Bandyopadhyay, Jadavpur University (India)

2:30 pm Coffee Break

2:50 pm  
Toner Layer Structure and Toner Adhesion on Coated Paper  
Katja M. Sipi, Helsinki University of Technology (Finland)

3:10 pm  
Photofinishing Paper for Digital Presses  
Dieter Reichel, CELFA/FOLEX (Switzerland)

3:30 pm  
Image Quality Improvement by Embedding Toner into a Special Resin-Coated Layer of Digital Electrophotography  
Tomofumi Tokiyoshi, Takashi Okazaki, Yasuhiro Oba, Shuichi Maeda, Akira Nakamura, and Masaru Kato, Oji Paper Company (Japan)  
Fyosuke Nakanishi, Kiyoshi Hosoi, Tsukasa Matsuda and Hiroyoshi Hosomura, Fuji Xerox Co., Ltd. (Japan)

Wednesday, October 3, 2001

Focussed Session on Image Permanence—Changing Requirements with the Transition to Digital Imaging
Session Chair(s): Douglas Bugner, Eastman Kodak Company

Wednesday, October 3 — 9:20 to 11:40 am

9:20 am Imaging Permanence: Professional Photography  
Rita Hofmann, Ilford Imaging Switzerland GmbH (Switzerland)
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<tr>
<th>Time</th>
<th>Session Title</th>
<th>Authors</th>
</tr>
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<tr>
<td>10:00 am</td>
<td><strong>Image Permanence: Commercial Signage/Fleet Graphic</strong></td>
<td>Ronald R. Adkins, Commercial Graphics Division, 3M (USA)</td>
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<tr>
<td>10:40 am</td>
<td><strong>Unique Image Permanence Issues Faced in the Medical Imaging Field as it Transitions from Analog to Digital Output</strong></td>
<td>Paula Calloway, Eastman Kodak Company (USA)</td>
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<tr>
<td>11:20 am</td>
<td><strong>Consumer Photography</strong></td>
<td>Franziska Frey, Rochester Institute of Technology (USA)</td>
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Lunch Break (on your own)

**Image Permanence**

*Session Chair(s): Henry Wilhelm, Wilhelm Imaging Research; Rita Hofmann, Ilford Imaging Switzerland GmbH; Tetsuo Murayama, Mitsubishi Chemical Corporation*

Wednesday, October 3—1:10 to 5:50 pm

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<tr>
<th>Time</th>
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<tr>
<td>1:10 pm</td>
<td><strong>Focal Paper: Ahrenius Testing under Controlled Atmospheres: Measurement of Dark Keeping Properties of Inkjet Photographic Prints</strong></td>
<td>Michelle Oakland, Douglas E. Bugner, Rick Levesque, and Peter Artz, Eastman Kodak Company (USA)</td>
</tr>
<tr>
<td>1:40 pm</td>
<td><strong>Effect of Ozone Exposure on Inkjet Prints</strong></td>
<td>Deepthi Sid, RIT Research Corporation (USA)</td>
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<tr>
<td>2:00 pm</td>
<td><strong>Ozone Concentration Effects on the Dark Fade of Inkjet Photographic Prints</strong></td>
<td>Michelle Oakland, Douglas Bugner, Rick Levesque, and Richard Vanhanehem, Eastman Kodak Company (USA)</td>
</tr>
<tr>
<td>2:20 pm</td>
<td><strong>The Influence of Relative Humidity on Short-Term Color Drift in InkJet Prints</strong></td>
<td>Mark McCormick-Goodhart and Henry Wilhelm, Wilhelm Imaging Research, Inc. (USA)</td>
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<tr>
<td>2:40 pm</td>
<td><strong>Estimating Light-fastness of InkJet Images: Accounting for Reciprocity Failures</strong></td>
<td>Shilin Guo and Nils Miller, Hewlett Packard Company (USA)</td>
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<tr>
<td>3:00 pm</td>
<td>Coffee Break</td>
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<tr>
<td>3:40 pm</td>
<td><strong>Focal Paper: Image Permanence of Ink Jet Photographic Prints</strong></td>
<td>Hiroyuki Onishi, Masahiro Hanamura, Hidemasa Kanada, and Teruaki Kaieda, Seiko Epson Corporation TP R&amp;D Division (Japan)</td>
</tr>
<tr>
<td>4:10 pm</td>
<td><strong>Reciprocity Behavior in the Light Stability Testing of Inkjet Photographs</strong></td>
<td>Henry Wilhelm and Mark McCormick-Goodhart, Wilhelm Imaging Research, Inc. (USA)</td>
</tr>
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</table>
4:30 pm Accelerated Laboratory Testing: Developing Meaningful Test Methods for Evaluating Light Stability of Ink Jet Images, Eric T. Everett, Q-Panel Lab Products (USA)

4:50 pm Densitometry versus Colorimetry for Permanence Investigations, Rita Hofmann, Eduard Baumann, and Remon Hagen, Ilford Imaging (Switzerland)

5:10 pm Interpretation of Life-of-Display Prediction Calculated from Accelerated Light Fading Tests, G. Van Ackere, H. Kanora, M. Graindourze, H. Friedel, and S. Lingier, Agfa-Gevaert N.V. (Belgium)

5:30 pm Issues in Evaluation and Standardization of Light Fading Tests of Ink Jet Materials, Barbara Vogt and Franziska Frey, Image Permanence Institute, Rochester Institute of Technology Rochester (USA)

Thursday, October 4, 2001

Image Permanence (continued)

Session Chair(s): Henry Wilhelm, Wilhelm Imaging Research; Rita Hofmann, Ilford Imaging Switzerland GmbH; Tetsuo Murayama, Mitsubishi Chemical Corporation

Thursday, October 4 —9:20 to 11:40 am

9:20 am Focal Paper: Light Stability and Gas Fading on Nanoporous Ink-Jet Materials, Rolf Steiger, Pierre-Alain Brugger and Martin Staiger, Ilford Imaging GmbH (Switzerland)


10:10 am Influence of Enclosure and Mounting Materials on the Stability of Inkjet Images, Mark B. Mizen and Christopher M. Mayhew, Creative Memories (USA)

10:30 am Coffee Break

11:00 am Aging Properties of Non-Impact Prints: Influence of the Paper Properties, Anne Blayo, Bernard Pineaux, and Franck Medlege, EFPG (France)

11:20 am Physical Colors by Nanoparticle Resonant Color Pigments for High-Quality Printing Processes, Manfred R. Kuehnle and Herman Statz, XMX Corporation (USA)

Lunch Break (on your own)
Image Permanence (Continued)
Session Chair(s): Henry Wilhelm, Wilhelm Imaging Research; Rita Hofmann, Ilford Imaging Switzerland GmbH; Tetsuo Murayama, Mitsubishi Chemical Corporation

Thursday, October 4—1:10 to 3:30 pm

1:10 pm  **Focal Paper: The Long-Term Preservation and Digital Access of the Corbis Photography Collections**, Els Rijper and William Hannigan, Corbis Corporation (USA)

1:40 pm  **Spectroscopic Determination of Very Low Quantum Yield of Singlet Oxygen Formation Photosensitized by Dyes and Pigments**, Shoichi Yamaguchi and Yutaka Sasaki, Center for Analytical Chemistry and Science, Inc. (Japan)
Kimiya Takeshita, Yukichi Murata, and Tetsuo Murayama, Mitsubishi Chemical Corporation (Japan)

2:00 pm  **Durability of Ink Jet Transfer Prints based on Fusible Coatings**, Axel Niemöller and Manfred Schäfer, Sihl Research and Development/Digital Imaging (Germany)

2:20 pm  Coffee Break

2:50 pm  **Development of Image Longevity Enhancing UV Blocking PET Overlamination Films**, Yijun Ye and Steve J. Sargeant, Toray Plastics America, Inc. Lumirror Operations (USA)

3:10 pm  **Natural Outdoor Testing: An Important Component of a Light Stability Testing Program**, Eric T. Everett, Q-Panel Lab Products (USA)

Friday, October 5, 2001

Production Digital Printing
Session Chair(s): Eric Stelter, Heidelberg Digital LLC; Gregor Enke, MAN Roland

Friday, October 5—8:00 to 10:00 am

8:00 am  **Focal Paper: Reimageable Offset Master - A Close Look to the DICO Process Parameters**, Michael Schönert, Alfons Schuster, and Josef Schneider, MAN Roland Druckmaschinen AG (Germany)

8:30 am  **Focal Paper: Digital Color Printing and the NexPress Approach**, Arun Chowdry, NexPress Solutions LLC (USA)

9:20 am The Opportunity of Digital Color Printing, Christopher J. Payne, NexPress Solutions LLC (USA)

9:40 am Developing a Common Print Application Architecture, Leonard Christopher, NexPress Solutions LLC (USA)

Track 2

Monday, October 1, 2001

Ink Jet Processes
Session Chair(s): Laurie Mittelstadt, Hewlett Packard Company; Arthur Soucemarianadin, University Joseph Fourier; Shinri Sakai, Seiko Epson
Monday, October 1—9:20 to 11:40 am


9:50 am Continuous Improvement: Performance and Reliability in Shear Mode Piezo Ink Jet Printing, Marlene McDonald, Spectra, Inc. (USA)

10:10 am Novel Silicon-Based Continuous Inkjet Printhead Employing Asymmetric Heating Deflection Means, James M. Chwalek, David Trauernicht, Christopher P. Delametter, David N. Jeanmaire, and Constantine Anagnostopoulos, Eastman Kodak Company (USA)

10:30 am Coffee Break

11:00 am Performance of Fluids in a Silicon-Based Continuous Inkjet Printhead Using Asymmetric Heating, David P. Trauernicht, Christopher N. Delametter, James M. Chwalek, David L. Jeanmaire, and Constantine Anagnostopoulos, Electronic Imaging Products, R&D, Hardcopy and Display Technology Division, Eastman Kodak Company (USA)

11:20 am Stimulation of a Conductive Liquid Jet Directly Heated by an Electric Current, B. Barbet, IMAJE (France); and P. Atten, L.E.M.D - CNRS & Université. Joseph Fourier (France)

Lunch Break (on your own)
Ink Jet Processes (Continued)
Session Chair(s): Laurie Mittelstadt, Hewlett Packard Company; Arthur Soucemarianadin, University Joseph Fourier; Shinri Sakai, Seiko Epson

Monday, October 1, 2001—1:10 to 3:00 pm

1:10 pm  **Focal Paper: Droplet Formation from Particulate Suspensions**  304
Roy J. Furbank and Jeffrey F. Morris, Georgia Institute of Technology (USA)

1:40 pm  **Dynamics of Jetted Liquid Filaments**  308
Pascal Pierron, Sandrine Allaman, and Arthur Soucemarianadin, University Joseph Fourier (France)

2:00 pm  **Droplet Formation and Physical Characterization of Powder Suspensions**  313
Sarojini Deevi, Philip Morris, (USA)

2:20 pm  **Air Bubble Management on a New Thermal Ink Jet Head**  314
Kazuyuki Oda, Koji Ikegami, Yoshihisa Ueda, and Masaki Kataoka, Fuji Xerox Co., Ltd. (Japan)

2:40 pm  **The Numerical Study on Size Effects of the Inkjet Print Head**  319
Ching-Long Chiu, Jinn-Cherng Yang, Chien-Hung Liu, Je-Ping Hu, and Charles C. Chang, OES/ITRI (Taiwan)

3:00 pm  **A Novel Re-circulating Ink Supply for Large Static Array and Scanning Carriage Print Head**  
Mats Ottosson, Xaar, UK

3:20 pm  Coffee Break

Ink Jet: Commercial and Industrial
Session Chair(s): Hiromichi Noguchi, Canon; Joseph Ryan, Hitachi Koki Imaging Solutions, Inc.; Mats Ottosson, Xaar

Monday, October 1—3:40 to 5:10 pm

3:40 pm  **Focal Paper: Adaptability of Piezoelectric Inkjet Head**  323
Tomoaki Takahashi, SEIKO EPSON Corporation (Japan)

4:10 pm  **Performance Improvements for Commercial Piezo Printhead**  328
Thomas G. Duby, Spectra, Inc. (USA)

4:30 pm  **An Aqueous UV Curable Inkjet Printing for Graphic Output**  332
Hiromichi Noguchi and Masako Shimomura, Canon Inc. (Japan)

4:50 pm  **Direct Computer to Plate Printing**  336
Daniel F. Gloster and Michael A. Andreottola, American Ink Jet Corporation (USA)
Tuesday, October 2, 2001

**Toner Based Printing Materials**  
*Session Chair(s): Thomas Jadwin, Heidelberg Digital LLC; Peter Erk, BASF; Yoichi Yamamoto, Sharp Corp; Manabu Takeuchi, Ibaraki University*

Tuesday, October 2—9:20 to 11:20 am

9:20 am **Focal Paper:** Encapsulated Emulsion Aggregation Toner for High Quality Color Printing, Yasuo Matsumura and Takashi Fuchiwaki, Fuji Xerox Co., Ltd. (*Japan*); and Patricia Burns, Xerox Research Centre of Canada (*Canada*)

9:50 am Preparation of Toner Particles with Micro-serrated Texture by Chemical Milling, Chul-Hwan Kim, Eui-Jun Choi, Seung-Wook Lim, Suk-Jin Kim, and Hyun-Nam Yoon, R&D Center of DPI Solutions, Inc. (*Korea*)

10:10 am Coffee Break

10:40 am Particle Size Distribution and Morphology of Suspension Polymerized Mono-component Magnetic Toner, Jun Yang, New Jersey Center for Engineered Particulates, NJIT (*USA*); Hong He, Tingjie Wang, Fei Wei, and Yong Jin, Department of Chemical Engineering, Tsinghua University (*China*)

11:00 am The Toner for Low Energy Fusing by Using Crystallized Polyester, Eiji Shirai, Katsutoshi Aoki and Masayuki Maruta, Kao Corporation Performance Chemicals Research Laboratories (*Japan*)

Lunch Break (on your own)

**Toner Based Printing Materials (Continued)**  
*Session Chair(s): Thomas Jadwin, Heidelberg Digital LLC; Peter Erk, BASF; Yoichi Yamamoto, Sharp Corp; Manabu Takeuchi, Ibaraki University*

Tuesday, October 2—1:10 to 3:50 pm

1:10 pm **Focal Paper:** CCA Effects on the Triboelectric Charging Properties of a Two-Component Xerographic Developer, Robert J. Nash, Michael L. Grande, and Richard N. Muller, Xerox Corporation (*USA*)

1:40 pm Effect of CCA Particle Configuration on the Charging Behavior of CCA/Binder Matrix Film Surface, Keiki Suganami, Manabu Takeuchi, Ibaraki University (*Japan*); and Toshihiko Oguchi, Morimura Chemicals Ltd. (*Japan*)
2:00 pm Standardization of the Blow-off Charge Measurement Procedure and Standard Developer, Toshihiko Oguchi, Morimura Chemicals Ltd. (Japan); Masatoshi Kimura, Fujitsu Ltd. (Japan); Noboru Sawayama, Ricoh Co., Ltd. (Japan); Chiaki Suzuki, Fuji Xerox Co., Ltd. (Japan); Masusuke Takahashi, Tokai University (Japan); Manabu Takeuchi, Ibaraki University (Japan); Tatsuya Tada, Canon Inc. (Japan); and Katsuyoshi Hoshino, Chiba University (Japan)

2:20 pm Coffee Break

2:50 pm A Nodal Model for Non-Linear Conduction in Toner Particles Modified with Conductive Additives Vladislav Skorokhod, Xerox Research Centre of Canada (Canada)

3:10 pm Study on Magnetic Force Acting on the Magnetic Toner in the High Pixel Density Magnetic Printer with Longitudinal Recording Norio Kokaji, Naoyuki Fujiya, and Taku Ono, Meisei University (Japan)

Wednesday, October 3, 2001

**Ink Jet Materials**

Session Chair(s): Aidan Lavery, Felix-Schoeller Imaging; James Mrvos, Lexmark International; Junichi Hanna, Tokyo Institute of Technology

Wednesday, October 3—9:20 to 12 noon


9:50 am Hyperbranched Polyesteramides For Imaging Applications Anindya Mukherjee, DSM New Business Development (USA); and Peter E. Froehling, DSM Research (The Netherlands)

10:10 am Measurement of Modulus Changes of a Phenolic Adhesive Using Nanoindentation for an Inkjet Printhead Nozzle Plate James M. Mrvos and Girish S. Patil, Lexmark International (USA); Elizabeth C. Dickey and Christopher Wonderly, University of Kentucky (USA)

10:30 am Coffee Break

11:00 am **Overview of Next Generation Phase Change Ink** Jule W. Thomas Jr., Xerox Corporation (USA)
11:20 am  Solid Ink Formulation Optimization Using Design of Experiment (DOE) Methodologies, Michael B. Meinhardt, Xerox Corporation (USA)

11:40 am  Measurement and Improvement of Automatic Document Feed Performance of Solid Ink Prints, Wolfgang Wedler, Xerox Corporation (USA)

Lunch Break (on your own)

Ink Jet Materials (Continued)
Session Chair(s): Aidan Lavery, Felix-Schoeller Imaging; James Mrvos, Lexmark International; Junichi Hanna, Tokyo Institute of Technology

Wednesday, October 3—1:10 to 2:20 pm

1:10 pm  Focal Paper: Fastness Properties of Ink Jet Prints on Coated Papers
Katri Vikman, Helsinki University of Technology (Finland)

1:40 pm  Nanoporous Photorealistic Materials for InkJet
P.A. Brugger, M. Staiger, R. Steiger, K. Peternell, and O. Cohu, ILFORD Imaging Switzerland GmbH (Switzerland)

2:00 pm  Dye and Pigment Ink Jet Image Stability and Permanence
Ray A. Work, III, Work Associates, Inc. (USA); and Russell T. Brown, DuPont Imaging Technologies (USA)

Textile and Fabric Printing
Session Chair(s): Ming Xu, Sawgrass System Inc.

Wednesday, October 3—2:30 to 5:30 pm

2:30pm  Focal Paper: The Future of Textile Printing Will be Digital
Brooks G. Tippett, Digital Printing Systems (USA)

3:00 pm  Coffee Break

3:40 pm  Focal Paper: Interrelationship Between Textile Design Styles and Production Methods, Hitoshi Ujiie, Philadelphia University (USA)

4:10 pm  Thermodynamics of the Digital Transfer Printing Process
Karl Siemensmeyer, John Provost, Friedrich W. Raults, and Jürgen Weiser, BASF Aktiengesellschaft (Germany)

4:30 pm  Pigmented Jet-Inks for Textile Applications
Ally Grant, SunJet (United Kingdom)
4:50 pm  High Performance Piezo Ink Jet Printheads and Production Printing of Textiles, Linda T. Creagh and Howard T. Baldwin, Spectra, Inc. (USA)

5:10 pm  Interactions of a Single Ink-Jet Droplet with Textile Printing Surfaces
H. Park and W. W. Carr, Georgia Institute of Technology (USA)
J. Zhu, Institute of Paper Science and Technology (USA)

Thursday, October 4, 2001

Color Science and Image Processing
Session Chair(s): Gerhard Thompson, IBM; Jos Notermans, Stork Digital Imaging BV; Hiroaki Kotera, Chiba University

Thursday, October 4 —9:20 to 11:20 am

9:20 am  Focal Paper: A System Design for Color Conversions
Jean Aschenbrenner, Reinhard Hohensee, and Yue Qiao, IBM (USA)

9:50 am  Compact Description of 3D Image Gamut Surface by SVD
Hiroaki Kotera and Ryoichi Saito, Chiba University (Japan)

10:10 am  Coffee Break

10:40 am  Comfortable Color Conversion using Image Segmentation
Mitsunori Suzuki and Hiroaki Kotera, Chiba University (Japan)

11:00 am  3D Gamut Comparison between Image and Device for Gamut Mapping
Ryoichi Saito and Hiroaki Kotera, Chiba University (Japan)

Lunch Break (on your own)

Color Science and Image Processing (Continued)
Session Chair(s): Gerhard Thompson, IBM; Jos Notermans, Stork Digital Imaging BV; Hiroaki Kotera, Chiba University

Thursday, October 4—1:10 to 4:40 pm

1:10 pm  Focal Paper: Printer Simulation Model
P.L.J. Welten and C.J.H. de Zeeuw, Stork Digital Imaging (The Netherlands)

1:40 pm  The Independent Yellow Channel for Tetrachromatic Imaging
Vitali V. Gavrik (Germany)
2:00 pm  **Prediction of the Reflection Spectra of Three Ink Colour Prints**  
Patrick Emmel and Roger David Hersch, Ecole Polytechnique Fédérale de Lausanne (EPFL) (Switzerland)

2:20 pm  Coffee Break

2:50 pm  **Extending Kubelka-Munk's Theory with Lateral Light Scattering**  
Safer Mourad and Klaus Simon, Eidgenossische Materialprüfungs-und Forschungsanstalt (EMPA) (Switzerland); and Patrick Emmel and Roger David Hersch, Ecole Polytechnique Federale de Lausanne (EPFL) (Switzerland)

3:10 pm  **Improved Color Error Diffusion**  
Koen Vande Velde and Paul Delabastita, Agfa-Gevaert (Belgium)

3:30 pm  **Focal Paper: Irrational Halftoning for Electronic Registration**  
Douglas N. Curry, Xerox, Palo Alto Research Center (USA)

4:00 pm  **Shapes of Printed Dots and Image Quality**  
Shigeru Kitakubo, Yasushi Hoshino, and Shi-Biao Xu, Nippon Institute of Technology (Japan)

4:20 pm  **Supercell Dither Masks with Constrained Blue Noise Interpolation**  
Chai Wah Wu and Gerhard R. Thompson, IBM T.J. Watson Research Center (USA)  
Charles P. Tresser, IBM Global Financial Markets Research Center (USA)  
and Mikel Stanich, IBM Printing Systems Division (USA)

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**Friday, October 5, 2001**

**Thermal Printing**  
*Session Chair(s): Dan Harrison, IIMAK; Michael Viola, Polaroid; Takao Abe, Konica*

Friday, October 5—8:00 to 10:20 am

8:00 am  **Focal Paper: Compact and Low Power-consuming Thermal Transfer Printer Unit for Built-in Use in Mobile Devices**  
Shin’ichi Sagawai, ALPS Electric Co., Ltd. (Japan)

8:30 am  **Photo Printing by Dye Thermal and Inkjet Techniques –Status and Prospects**  
Richard A. Hann and Andrew A. Clifton, ICI Imagedata (United Kingdom)

8:50 am  **New Thermal Offset Printing Employing Dye Transfer Technology (Tandem TOP-D)**, Nobuyoshi Taguchi, Yukikazu Oochi, Kumio Nago, Yukihiro Shimazaki, and Shigeru Yoshida, AVC Company, Matsushita Electric Industrial Co., Ltd. (Japan)
9:10 am  **Study of a 1200dpi High-Resolution Thermal Print Head**  
Hirotoshi Terao, Toshifumi Nakatani, Noboru Tsushima, and Ikuo Hibino, ALPS Electric Co., Ltd. (Japan)

9:40 am  **Focal Paper: New Developments in Thermal Transfer Imaging**  
Daniel J. Harrison and Pam Geddes, IIMAK (USA)

10:10 am  **Cohesive Ink Failure with Thermal Transfer Printing**  
Tom Rogers, Kevin Conwell and Kathy McCready, Intermec Technologies Corporation (USA)

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**Track 3**

**Monday, October 1, 2001**

**Focussed Session on Electronic Paper and Paper-like Display**  
*Session Chair(s): Masaaki Yokoyama, Osaka University, Andronique Ioannidis, Xerox Corp.*

Monday, October 1—9:20 am to 11:40 am

9:20 am  **Evolution and Potential of Thermal Rewritable Marking**  
Yoshihiko Hotta, Thermal Media Company, Ricoh Co., Ltd. (Japan)

10:00 am  **The Present and Future of Gyricon Electronic Paper Displays**  
Robert Sprague, Xerox Palo Alto Research Center (USA)

10:40 am  **E Ink Displays**, Ian Morrison, E Ink Corporation (USA)

11:20 am  **Photo-addressable Electronic Paper Using Cholesteric Liquid Crystal**  

Lunch Break (on your own)

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**Optoelectronic Imaging Materials and Devices**  
*Session Chair(s): Masaki Yokoyama, Osaka University; Jin Mizuguchi, Yokohama National University; Frank Nuesch, EPF Lausanne; Jim Duff, Xerox Research Center of Canada*

Monday, October 1—1:10 to 5:00 pm

1:10 pm  **Focal Paper: Materials and Patterning Methods for Plastic Electronics**  
Zhenan Bao, Bell Laboratories, Lucent Technologies (USA)
1:40 pm **ITO Modification for More Efficient Hole Injection in Organic Light Emitting Diodes**, Yulong Shen, Ken Diest and George Malliaras, Cornell University (USA)

2:00 pm **Space Charge Effects in Single Molecular Devices**
David H. Dunlap\(^1\)\(^2\) and George G. Malliaras\(^1\), \(^1\)Cornell University (USA) and \(^2\)University of New Mexico (USA)


2:40 pm **Photocurrent Multiplication in Pigment Dispersion Films and its Application to Opto-electronic Devices**, Ken-ichi Nakayama, Yoshihiro Nishikawa and Masaaki Yokoyama, Osaka University (Japan); CREST, Japan Science and Technology Corporation (JST) (Japan)

3:00 pm Coffee Break

3:30 pm **Focal Paper: Electron Emission Devices Using Carbon Nanocoils**
Yoshikazu Nakayama, Lujun Pan, and Taichi Hayashida, University of Osaka Prefecture (Japan)

4:00 pm **Impurity Effect in Self-Organizing Molecular Semiconductors**
Takahiro Kamitani, Masahiro Funahashi, and Jun-ichi Hanna, Tokyo Institute of Technology (Japan)

4:20 pm **Relationship Between Molecular Properties of Hole Transport Molecules and Field Dependence of Hole Mobility**, Takayuki Shoda, Tetsuo Murayama, and Akiteru Fujii, Mitsubishi Chemical Corporation (Japan)

4:40 pm **Focal Paper: Charge Transport Modelling in Organic Light-Emitting Diodes**
M. N. Bussac, E. Tutis, and L. Zuppiroli, Ecole Polytechnique Fédérale (Switzerland)

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**Tuesday, October 2, 2001**

**Optoelectronic Imaging Materials and Devices (Continued)**

*Session Chair(s):* Masaki Yokoyama, Osaka University; Jin Mizuguchi, Yokohama National University; Frank Nuesch, EPF Lausanne; Jim Duff, Xerox Research Center of Canada

Tuesday, October 2—9:20 to 11:40 am

9:20 am **The Design of High Performance Organic Photoconductors** *(Carlson Award Presentation)*, Tetsuo Murayama, Mitsubishi Chemical Corporation (Japan)
9:50 am  **π-π Interactions of Magnesiumphthalocyanine as Evaluated by Energy Partition Analysis**, Jin Mizuguchi, Yokohama National University (*Japan*)

10:10 am  **Crystal and Electronic Structures of Perylene Derivatives**
Kaoru Tojo and Jin Mizuguchi, Yokohama National University (*Japan*)

10:30 am  Coffee Break

11:00 am  **Time-resolved Fluorescence Study on Primary Photocarrier Generation Process in Layered Organic Photoreceptors**
Yutaka Sasaki and Shoichi Yamaguchi, Center for Analytical Chemistry and Science, Inc. (*Japan*);
Takayuki Shoda, Shinji Aramaki and Tetsuo Murayama, Mitsubishi Chemical Corporation (*Japan*)

11:20 am  **A Study of 1-Dot Latent Image Potential**
Kouichi Aizawa, Motohiro Takeshima, and Haruo Kawakami, Fuji Electric Imaging Device Company, Ltd. (*Japan*)

Lunch Break (on your own)

**Specialty and Security Printing**

*Session Chair(s): Yee Ng, NexPress Solutions LLC; Loc Bui, Metromedia Technologies*

Tuesday, October 2—1:10 to 3:30 pm

1:10 pm  **Focal Paper: Overview of Industrial Digital Printing**
William R. Dougherty and Ann Reitnauer, Markem Corporation (*USA*)

1:40 pm  **Digital Printing Adds New Dynamism to the Decorative Markets**
Jasmine Geerinckx, Barco Graphics (*Belgium*)

2:00 pm  **Interactions of Solvent Based Inks and Vinyl for Ultrawide Format Graphics**, Kevin Andrews, Metromedia Technologies, Inc. (*USA*);
Nathaniel R. Schwartz and Michael Fein, Flint Ink Corporation (*USA*)

2:20 pm  Coffee Break

2:50 pm  **Metrology of Small Scale Features in Electrophotographic Non-Image Areas as Forensic Evidence**, Tobin Tanaka, Canada Customs & Revenue Agency (Canada)

3:10 pm  **Use of an Automated Print Quality Assessment System for the Forensic Classification of Inkjet Printers**, Marc Gaudreau, American Society of Questioned Document Examiners, American Board of Forensic Document Examiners, Canadian Society of Forensic Science (*Canada*)

* Paper not available at time of publication
Wednesday, October 3, 2001

**Toner Based Printing Processes**

*Session Chair(s):* Ian Neilson, Coates Electrographics; Thomas Tombs, NexPress Solutions LLC; Koji Hirakura, Ricoh Company Ltd.

Wednesday, October 3—9:20 to 11:40 am

9:20 am  **Focal Paper: Dynamics of Magnetic Bead Chain in Magnetic Field**  594
Hiroyuki Kawamoto, Nobuyuki Nakayama, Makoto Yamaguchi, Waseda University (Japan)

9:50 am  **Statics of Magnetic Bead Chain in Magnetic Field**  600
Nobuyuki Nakayama, Hiroyuki Kawamoto, and Makoto Yamaguchi, Waseda University (Japan)

10:10 am  **Numerical Simulation of Toner Concentration Distribution in Two-Component Developer by Diffusion-Convection Model**  606
Takeo Tsukamoto, Ricoh Company, Ltd. (Japan)

10:30 am  Coffee Break

11:00 am  **The Adhesion of Spherical Toner: Electrostatic and van der Waals Interactions**  610
D.S. Rimai, M. Ezenyilimba, W.K. Goebel, and S. Cormier, NexPress Solutions LLC (USA)
and D. J. Quesnel, University of Rochester (USA)

Vladimir Rubek, Consultant (USA); and Akin Ecer, Purdue University (USA)

Lunch Break (on your own)

**Toner Based Printing Processes (Continued)**

*Session Chair(s):* Ian Neilson, Coates Electrographics; Thomas Tombs, NexPress Solutions LLC; Koji Hirakura, Ricoh Company Ltd.

Wednesday, October 3—1:10 to 4:50 pm

1:10 pm  **Focal Paper: The Charging Characteristics of Fine Particle Layers with Corona-Charge**, Kazuhiko Furukawa, Shigeru Nishio, Tetsuro Toyoshima, and Tooru Okuda, SHARP Corporation, (Japan)  619
1:40 pm  A Numerical Study of Induction Heating Fusers  
Shogo Yokota, Toshiaki Kagawa, Atsuyuki Katoh, SHARP Corporation (Japan)  

2:00 pm  Ferroelectric Printing: Electrical Surface Conditions and Print Quality  
Susann Reuter, Arved C. Hübler, Sigrid Franke, Klaus Wolf, and Michael Schönert, Chemnitz University of Technologies (Germany) and MAN Roland Druckmaschinen (Germany)  

2:20 pm  Analysis on Stick and Slip Behavior of Cleaning Blades  
Kuniki Seino and Shizuo Yuge, Minolta Co., Ltd. (Japan); and Masao Uemura, Toyohashi University of Technology (Japan)  

2:40 pm  Numerical Simulation of Charging Characteristics under the Influence of Photoconductor Defects  
Satoshi Hasebe and Nobuyuki Nakayama, Fuji Xerox Co., Ltd. (Japan)  

3:00 pm  Coffee Break  

3:40 pm  Photoconductor Charging Modeling for Color Laser Printing System  
Joong-Gwang Shin, Junhee Cho, Inyong Song, and Kyucheol Shin, Samsung Electronics Co., Ltd. (Korea)  

4:10 pm  Transfer Current and Efficiency in Toner Transfer to Paper  
Hussain AL-Rubaiey, and Pirkko Oittinen, Helsinki University of Technology, (Finland)  

4:30 pm  Focal Paper: Custom Color Printing with Liquid Toners  
Ed Caruthers, Enrique Viturro, Jim Larson, and George Gibson, Xerox Wilson Center for Research and Technology (USA)  

Thursday, October 4, 2001  
Advanced and Novel Imaging Systems  
Session Chair(s): Yong Zhou, Spectra Inc.; Norio Kokaji, Meisei University; J. J. Eltgen, Xeikon  

Thursday, October 4—9:20 to 11:40 am  

9:20 am  Findings from 15 years of TonerJet® Research (Kosar Award Presentation)  
Ove Larson, Array AB (Sweden)  

9:50 am  Focal Paper: Acoustic Ink Printing: Photographic Quality Printing at High Speed  

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10:20 am Drop Modulation by Second Harmonic Using Fresnel Lens in Acoustic Inkjet Printing, Toshinobu Hamazaki and Naoki Morita, Fuji Xerox Co., Ltd. (Japan)

10:40 am Coffee Break

11:00 am Acoustic Ink Printing with Solid Ink
S. Elrod, S. Buhler, R. Ellson, J. Fitch, B. Hadimioglu, R. Kowalski, R. Matusiak, J. Roy, B. Russo, R. Sprague, M. Weisburg, D. White, M. Young, and J. Zesch, Xerox Palo Alto Research Center (USA); J. Wang, E. Panides, and J. Domoto, Xerox Wilson Center for Research and Technology (USA)

11:20 am Micromachined Piezoelectrically Actuated Flextensional Transducers for High Resolution Printing, Gökhan Perçin, Adeptient (USA); and Butrus T. Khuri-Yakub, Stanford University (USA)

Lunch Break (on your own)

Advanced and Novel Imaging Systems (Continued)
Session Chair(s): Yong Zhou, Spectra Inc.; Norio Kokaji, Meisei University; J. J. Eltgen, Xeikon

Thursday, October 4—1:10 to 3:30 pm

1:10 pm Focal Paper: Contact Electrography - A New Electrographic Printing Technology, Gerhard Bartscher and Domingo Rohde, NexPress GmbH (Germany)

1:40 pm Dynamics of Pin Electrode in Pin-to-Plate Discharge System
Hiroyuki Kawamoto, Kosuke Takasaki, and Hiromu Yasuda, Waseda University (Japan)

2:00 pm Smart Printhead Electronics controls Print Quality in Océ’s Direct Imaging Process, M. Slot and René J. van der Meer, Océ Technologies B.V. (The Netherlands)

2:20 pm Coffee Break

2:50 pm High-Speed High-Resolution 1200 dpi LED Print Head
Masumi Taninaka, Masumi Koizumi, Masaharu Nobori, Hiroshi Tohyama, Mitsuhiro Ogiha, and Yukio Nakamura, Oki Digital Imaging Corporation (Japan)

3:10 pm The Newly Developed Extra High Quality Imaging System Can Display Both Merits of Printing and Electric Imaging: Very Dark Expression Space
Makoto Miyahara, JAIST, School of Information Science (Japan)
Friday, October 5, 2001

Print and Image Quality
Session Chair(s): Eric Zeise, NexPress Solutions; Katja Sipi, Helsinki University of Technology; Makoto Matsuki, NTT Quaris Corp.

Friday, October 5—8:00 to 11:20 am

8:00 am  Focal Paper: Image Quality Criteria and the Enhancement of Digital Prints, Rodney Shaw, Hewlett Packard Research Laboratories (USA)

8:30 am  Repurposing Device-Dependent Screens for Unintended Printers
Stephen Herron, Xerox Corporation (USA)

8:50 am  A New Method of Measuring Gloss Mottle and Micro-Gloss Using a Line-Scan CCD-Camera Based Imaging System, Yair Kipman, Prashant Mehta, Kate Johnson, and Dave Wolin, ImageXpert, Inc. (USA)

9:10 am  Gloss Uniformity Attributes for Reflection Images
Yee S. Ng, Chunghui Kuo, and C. Jeffrey Wang, NexPress Solutions LLC (USA)

9:30 am  A Report on a Subjective Print Quality Survey Conducted at NIP16
Gretchen Gast and Ming-Kai Tse, Quality Engineering Associates Inc. (USA)

9:50 am Coffee Break

10:10 am  Focal Paper: Media Issues In Electrophotographic Digital Printing
Velliyur Sankaran and James Smith, Oce Printing Systems USA, Inc. (USA)

10:40 am  Modeling Ink-penetration for Ink-jet Printing
Li Yang, Björn Kruse, Campus Linköping University (Sweden)
Nils Pauler, Mreal AB (Sweden)

11:00 am  Measuring Dynamic Interactions Between Paper and Microscale Ink Drops
Jali Heilmann, VTT Information Technology (Finland)

Interactive Group T-A

Tuesday, October 2, 2001

Interactive Session: Advanced and Novel Imaging Systems

4:10 pm  A Novel Application of Ink-Jet Printing Technology on Manufacturing Color Filter for Liquid Crystal Display, Kevin Cheng, Tz-Ya Yang, Victor Wang, Chien-Chang Lai, Kuo-Hua Wu, and Jessen Chen, OES/Industriial Technology Research Institute (Taiwan)

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Role of Charge Transport Layer in Toner Display by Electrical Particle Movement, Makoto Yasuda, Gug-rae Jo, Katsuyoshi Hoshino, and Takashi Kitamura, Chiba University (Japan)  

A New Type of Display for Electric Paper Using Fine Particles Dispersed in the Nematic Liquid Crystal Cell  
Yasuo Toko, Yasushi Iwakura, Stanley Electric Co., Ltd. (Japan)  
Yutaka Kohrin, Tetsuya Hayakawa, and Taiju Takahashi, Kokakuin University (Japan)  

Evaluation of Particle Velocity in Mobile Fine Particles Display with Liquid Crystal, Taiju Takahashi, Yutaka Kohrin, Tetsuya Hayakawa, Kogakuin University (Japan), Yasuo Toko, and Yasushi Iwakura, Stanley Electric Co., Ltd. (Japan)  

Operation Efficiency Measurements and Subjective Evaluations for Tasks on Hardcopy and Various Displays, Hirokazu Yoshikawa, Hidenori Sakai, Makoto Omodani, and Yasusuke Takahashi, Tokai University (Japan)  

Interactive Session: Optoelectronic Imaging Materials  

J-Aggregate-like Structure and its Influence on the Electronic Spectra in 1,4-diketo-3,6-bis(4-biphenylyl)pyrrolo[3,4-c] pyrrole  
Jin Mizuguchi, Yokohama National University (Japan)  

Can the Poole-Frenkel Model Explain the Charge Carrier Transport in Disordered Organic Materials?  
Sergey Novikov, A.N. Frumkin Institute of Electrochemistry (Russia)  

Photoelectrochemical Stability of Triarylamine Doped Polycarbonate Layers  

Surface Voltage Decay Model of Phthalocyanine Binder Type Photoreceptor (II), Yasushi Hoshino, Nippon Institute of Technology (Japan)  

Flow Behavior of Micro Inkjet Drop on The Layer Surface of Micro Color Device, Chin-Tai Chen and Tz-Ya Yang, Industrial Technology Research Institute (Taiwan)
Interactive Group T-B

Tuesday, October 2, 2001

Interactive Session: Color Science and Image Processing

4:10 pm  Resolution Distribution in Human Vision  780
Hideaki Takamiya, Makoto Omodani, and Yasusuke Takahashi,
Tokai University (Japan)

4:15 pm  Digital Halftoning Based on a Repulsive Potential Model  784
Kazuhisa Yanaka and Hideo Kasuga, Kanagawa Institute of Technology (Japan)
and Yasushi Hoshino, Nippon Institute of Technology (Japan)

4:20 pm  Gamma Transformation (Tone Rescaling) by Sigmoid Function II,  789
Yoshitaka Iwasaki, Takashi Yamaguchi, Takashi Watanabe, and Yasushi Hoshino,
Nippon Institute of Technology (Japan)

4:25 pm  Document Resizing Using a Multi-layer Neural Network  792
Mohamed N. Ahmed, Brian E. Cooper, and Shaun Love,
Lexmark International (USA)

4:30 pm  Gamut Mapping in a Composite Color Space  797
Huanzhao Zeng, Hewlett-Packard Company (USA)

4:35 pm  Color Gamut Mapping along Electrostatic Field Lines  801
Maarten van Gestel and Henk Draaisma, Oce-Technologies B.V. (The Netherlands)

4:40 pm  3-Dimensional Color Gamut Quantification and Comparison  804
Paul Doll, American Ink Jet Corporation (USA)

Interactive Session: Print and Image Quality

4:45 pm  Stochastic Frequency Distribution Analysis as Applied to Ink Jet
Print Mottle Measurement, Roy R. Rosenberger, Verity IA LLC (USA)  808

4:50 pm  Comparative Study Between Digital and Offset Litho Printing
Systems, George Nubar Simonian, Helwan University (Egypt)  813

4:55 pm  3-D Convex Outputs for the Blind - Image Quality Analysis  820
Ludwik Buczynski, Warsaw University of Technology (Poland)

5:00 pm  Applications of Human Vision Modeling Theories in Image Quality
Valuation of Ink Jet Hardcopy Outputs, Arkadiusz Pietrzak,
Warsaw University of Technology (Poland)  825
**Interactive Session: Digital Printing/Quality Control Instrumentation**

5:05 pm  **The Automatic Primary Charge Roller Detecting System**
Hungjing Tiong and Hsu Jonathan, OES, ITRI *(Taiwan)*

**Interactive Group TH-A**

Thursday, October 4, 2001

**Interactive Session: Toner Based Printing Material**

3:50 pm  **Relationship between Tribocharge and Contact Potential Difference in Toner-Carrier Systems**, Masahide Yamaoka and Manabu Takeuchi, Ibaraki University *(Japan)*

3:55 pm  **Toner Charging Behavior in Mono-Component Developing Process**
Norimasa Iwai and Manabu Takeuchi, Ibaraki University *(Japan)*
Yoichi Yamamoto, Sharp Corp. *(Japan)*

4:00 pm  **High Performance Magenta for NIP Applications**
Ruediger Baur and Hans-Tobias Macholdt, Clariant GmbH *(Germany)*

4:05 pm  **Morphology of Toner-Silica Interfaces**
Mario Heinemann, Herbert Barthel, Ute Volkel, Sabine Hild, Wasker-Chemie GmbH *(Germany)*; University of Ulm *(Germany)*

**Interactive Session: Toner Based Printing Processes**

4:10 pm  **The Effect of Relative Humidity on the Toner in the Developing Process**
Liu Howard and Hungjing Tiong, OES/ITRI *(Taiwan)*

4:15 pm  **MICR Performance and the Relationship to MICR Toner Adhesion**
James C. Maher, Richard Chatfield, Francisco Aponte, and Daniel Charles, Rosetta Technologies Corporation *(USA)*

4:20 pm  **An Improved Technique for the Driven Characteristics for Toner Transportation**, Keiji Taniguchi, Tatsuaki Yagi, Yutaka Nakano, Takanori Sakai, Hiroaki Yamamoto, and Sadakazu Watanabe, Fukui University *(Japan)*

4:25 pm  **Measured Specific Toner Charge Dependence on Suction Pressure in Blow off Method**, R. Ohtsuka, T. Fujita, K. Konnai, and Yasushi Hoshino, Nippon Institute of Technology *(Japan)*

4:30 pm  **Characteristic Analysis for Color Development Process Using Liquid Toner**, Inyong Song, Junhee Cho, Joong-Gwang Shin, and Kwangho No, Samsung Electronics Co., Ltd. *(Korea)*
Interactive Group TH-B

Thursday, October 4, 2001

Interactive Session: Media for Digital Printing

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<td>Analysis of Inkjet Paper Print Quality: Filling the “Quality Gap”</td>
<td>Frank Huskey, Engelhard Corporation (USA)</td>
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<td>Humidity Effects on Plain Paper in Inkjet Printing</td>
<td>Olle Högberg, Stora Enso Fine Paper (Sweden) Minna Talaskivi,</td>
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Interactive Session: Ink Jet Materials

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<td>Fluorescent Nanocolorants Based on Dye-Packaging Technology for Ink</td>
<td>Nikolay N. Barashkov and Ronghua Liu, Radiant Color (USA)</td>
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Interactive Session: Ink Jet: Commercial and Industrial

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<td>Optimization Fiber Density Design of Fibrous Ink Retaining Member</td>
<td>Leonid Yuan and Chien-Chang Lai, OES, ITRI (Taiwan)</td>
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Interactive Session: Ink Jet Processes

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<td>Acoustic Phenomena in a Demand-Mode Piezoelectric Ink-Jet Printer</td>
<td>Bogdan V. Antohe and David B. Wallace, MicroFab Technologies Inc. (USA)</td>
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<td>Designing and Optimizing New Microchannel Architectures to Approach</td>
<td>Chien-Hung Liu, Je-Ping Hu, Shu-Chuan Cheng, and Chun-Jung</td>
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<td>High Frequency Inkjet</td>
<td>Chen, Industrial Technology Research Institute (Taiwan)</td>
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Interactive Session: Specialty and Security Printing

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<td>Reproduction of Depth of Scene in Some Kinds of Printing</td>
<td>Hideki Shirai and Makoto Miyahara, JAIST, School of Information Science (Japan)</td>
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