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Computational Imaging XX

San Francisco | New York | Paris | Tokyo

NOTES ABOUT THIS VIEW OF THE PROGRAM

- Below is the the program in San Francisco time.
- Talks are to be presented live during the times noted and will be recorded. The recordings may be viewed at your convenience, as often as you like, until **15 May 2022.**

MONDAY 17 JANUARY 2022

IS&T Welcome & PLENARY: Quanta Image Sensors: Counting Photons Is the New Game in Town

07:00 – 08:10

The Quanta Image Sensor (QIS) was conceived as a different image sensor—one that counts photoelectrons one at a time using millions or billions of specialized pixels read out at high frame rate with computation imaging used to create gray scale images. QIS devices have been implemented in a CMOS image sensor (CIS) baseline room-temperature technology without using avalanche multiplication, and also with SPAD arrays. This plenary details the QIS concept, how it has been implemented in CIS and in SPADs, and what the major differences are. Applications that can be disrupted or enabled by this technology are also discussed, including smartphone, where CIS-QIS technology could even be employed in just a few years.

Eric R. Fossum, Dartmouth College (United States)

IMPORTANT DATES

	2021
Journal-first submissions deadline	8 Aug
Priority submissions deadline	30 Jul
Final abstract submissions deadline	15 Oct
Manuscripts due for FastTrack publication	30 Nov
Early registration ends	31 Dec
	2022
Short Courses	11-14 Jan
Symposium begins	17 Jan
All proceedings manuscripts due	31 Jan

Eric R. Fossum is best known for the invention of the CMOS image sensor "camera-on-a-chip" used in billions of cameras. He is a solid-state image sensor device physicist and engineer, and his career has included academic and government research, and entrepreneurial leadership. At Dartmouth he is a professor of engineering and vice provost for entrepreneurship and technology transfer. Fossum received the 2017 Queen Elizabeth Prize from HRH Prince Charles, considered by many as the Nobel Prize of Engineering "for the creation of digital imaging sensors," along with three others. He was inducted into the National Inventors Hall of Fame, and elected to the National Academy of Engineering among other honors including a recent Emmy Award. He has published more than 300 technical papers and holds more than 175 US patents. He co-founded several startups and co-founded the International Image Sensor Society (IISS), serving as its first president. He is a Fellow of IEEE and OSA.

08:10 – 08:40 EI 2022 Welcome Reception

Topics in Coherent Sensing

Session Chair: Andre Van Rynbach, U.S. Air Force (United States)
08:40 – 09:45

Blue Room
08:40
Conference Introduction

08:45 COIMG-102
Coherent sensing performance using photon-counting arrays (Invited) [PRESENTATION-ONLY], *Maureen E. Szymanski[1,2], Edward A. Watson[2,3], and David J. Rabb[1,2]; [1]US Air Force Research Laboratory, [2]University of Dayton, and [3]Vista Applied Optics, LLC (United States)* [view abstract]

09:00 COIMG-103
Adaptive deep learning for coherent imaging in scattering media (Invited) [PRESENTATION-ONLY], *Lei Tian, Boston University (United States)* [view abstract]

09:15 COIMG-104
Quantum limits for coherent-field estimation (Invited) [PRESENTATION-ONLY], *Timothy J. Schulz[1] and David J. Brady[2]; [1]Michigan Technological University and [2]The University of Arizona (United States)* [view abstract]

09:30 COIMG-105

Compressive single shot synthetic aperture imaging (Invited) [PRESENTATION-ONLY], *David J. Brady[1], Timothy J. Schulz[2], Chengyu Wang[1], and Minghao Hu[1]; [1]The University of Arizona and [2]Michigan Technological University (United States)* [view abstract]

KEYNOTE: Topics in Coherent Sensing

Session Chair: Andre Van Rynbach, U.S. Air Force (United States)
10:10 – 11:10

Blue Room

10:10 COIMG-111

3D phase and fluorescence microscopy with scattering samples (Invited) [PRESENTATION-ONLY], *Laura Waller, University of California, Berkeley (United States)* [view abstract]

10:25 COIMG-112

KEYNOTE: Computational imaging by phase retrieval: From astronomical speckle to x-ray coherent diffractive imaging [PRESENTATION-ONLY], *James R. Fienup, University of Rochester (United States)*

Researchers used phase retrieval for reconstructing electron density functions of crystalline structures from scattered x-ray data (x-ray crystallography) for many decades. In the 1970's, algorithms were finally developed that worked for non-crystalline (non-periodic), general objects and were applied to astronomical imaging, overcoming the blurring effects of atmospheric turbulence, using data from Labeyrie's stellar speckle interferometry approach. In 1999, the algorithms developed for astronomy began to be used for reconstructing images of non-crystalline objects illuminated with coherent x-rays. As high-brightness, highly coherent x-ray sources were developed, the field of x-ray coherent diffractive imaging grew. The development of alternative data-collection approaches, ptychography in particular, allows for a very robust reconstruction of images of small objects on the nanometer scale. This presentation will describe the development of those phase retrieval algorithms.

James R. Fienup received an AB in physics and mathematics from Holy Cross College (Worcester, MA), and

his MS and PhD (1975) in applied physics from Stanford University, where he was a National Science Foundation graduate fellow. He performed research for 27 years at the Environmental Research Institute of Michigan and Veridian Systems, where he was a senior scientist. He joined the faculty at the University of Rochester in 2002 as the Robert E. Hopkins Professor of Optics. Professor Fienup is a fellow of the Optical Society of America and of the International Society for Optical Engineering (SPIE), and is a senior member of IEEE. He was awarded the Rudolf Kingslake Medal and Prize for 1979 by the SPIE, the International Prize in Optics for 1983 by the International Commission for Optics, the Emmett N. Leith Medal by the Optical Society of America (OSA) for 2013 and became a member of the National Academy of Engineering in 2012. He was a distinguished visiting scientist at the Jet Propulsion Laboratory in 2009. He was editor-in-chief of the Journal of the Optical Society of America A, 1997-2003. He previously served as division editor of Applied Optics - Information Processing, and associate editor of Optics Letters. One of his papers [J.R. Fienup, "Phase Retrieval Algorithms: a Comparison," Appl. Opt. 21, 2758-2769 (1982)] has received more than 4,600 citations (Google Scholar) and is the most highly cited paper (out of over 50,000) in the journal Applied Optics.

Recent Advances in Scientific CT I

Session Chairs: Doga Gursoy, Argonne National Laboratory Advanced Photon Source (United States); K. Aditya Mohan, Lawrence Livermore National Laboratory (United States); and Singanallur Venkatakrishnan, Oak Ridge National Laboratory (United States)
15:00 – 16:00

Blue Room

15:00 COIMG-119
Weighted minimum norm algorithm for improved phase unwrapping, *Tegan F. Lakshmanan[1], Kyle M. Champley[2], and K. Aditya Mohan[2]; [1]University of California, Berkeley and [2]Lawrence Livermore National Lab (United States)* [view abstract]

15:15 COIMG-120
Nondestructive characterization systems to defend the homeland, with emphasis on an x-ray CT system independent feature space (Invited) [PRESENTATION-ONLY], *Harry E. Martz, Steven M. Glenn, Kyle M. Champley, Isaac Seetho, Jeff Kallman, and K. Aditya Mohan, Lawrence Livermore National Laboratory (United States)* [view abstract]

15:30 COIMG-122
Denoising advanced x-ray tomography data using deep learning without high-quality reference data (Invited) [PRESENTATION-ONLY], *Daniel Pelt, Leiden University (the Netherlands)* [view abstract]

Recent Advances in Scientific CT II

Session Chairs: Doga Gursoy, Argonne National Laboratory Advanced Photon Source (United States); K. Aditya Mohan, Lawrence Livermore National Laboratory (United States); and Singanallur Venkatakrishnan, Oak Ridge National Laboratory (United States)
16:15 – 17:15

Blue Room

16:15 COIMG-127
Grazing-incidence diffraction tomography with synchrotron x-rays (Invited) [PRESENTATION-ONLY], *Esther Tsai, Masafumi Fukuto, and Ruipeng Li, Brookhaven National Laboratory (United States)* [view abstract]

16:30 COIMG-128
Hyperspectral neutron CT with material decomposition (Invited) [PRESENTATION-ONLY], *Thilo Balke[1], Alexander M. Long[1], Sven C. Vogel[1], Brendt Wohlberg[1], and Charles A. Bouman[2]; [1]Los Alamos National Laboratory and [2]Purdue University (United States)* [view abstract]

16:45 COIMG-129
A metal artifact reduction scheme for accurate iterative dual-energy CT algorithms, *Tao Ge[1], Maria Medrano[1], Rui Liao[1], Jeffrey F. Williamson[1], David Politte[1], Bruce R. Whiting[2], and Joseph A. O'Sullivan[1]; [1]Washington University in St. Louis and [2]University of Pittsburgh (United States)* [view abstract]

17:00 COIMG-130
Non-paraxial multiple scattering model for multiplexed intensity diffraction tomography [PRESENTATION-ONLY], *Jiabei Zhu[1], Hao Wang[1], Alex Matlock[2], and Lei Tian[1]; [1]Boston University*

and [2]Massachusetts Institute of Technology (United States) [view abstract]

TUESDAY 18 JANUARY 2022

Photon-Limited Imaging I

Session Chairs: Stanley Chan, Purdue University (United States) and Keigo Hirakawa, University of Dayton (United States)
07:00 – 08:00

Blue Room

07:00 COIMG-135
Photon-starving and high-dynamic-range imaging with photon-counting quanta image sensors (Invited) [PRESENTATION-ONLY], *Jiaju Ma, GigaJot Technology (United States)* [view abstract]

07:15 COIMG-136
Photon-limited object detection for CMOS cameras and quanta image sensors (Invited) [PRESENTATION-ONLY], *Stanley Chan[1], Chengxi Li[1], Xiangyu Qu[1], Abhiram Gnanasambandam[1], Omar Elgendy[2], and Jiaju Ma[2]; [1]Purdue University and [2]GigaJot Technology (United States)* [view abstract]

07:30 COIMG-137
High dynamic range single photon LiDAR (Invited) [PRESENTATION-ONLY], *Robert K. Henderson, University of Edinburgh (United Kingdom)* [view abstract]

07:45 COIMG-138
Log-simplex denoising for color images (Invited) [PRESENTATION-ONLY], *Sarah Miller[1], Keigo Hirakawa[1], and Chen Zhang[2]; [1]University of Dayton and [2]OmniVision Technologies, Inc. (United States)* [view abstract]

Photon-Limited Imaging II

Session Chairs: Stanley Chan, Purdue University (United States) and Keigo Hirakawa, University of Dayton (United States)
08:30 – 09:30

Blue Room

08:30 COIMG-149
Computational imaging, one photon at a time (Invited) [PRESENTATION-ONLY], *Mohit Gupta, University of Wisconsin, Madison (United States)* [view abstract]

08:45 COIMG-150
From a handful of photons (Invited) [PRESENTATION-ONLY], *Hamid Sheikh, Samsung Research America (United States)* [view abstract]

09:00 COIMG-151
An improved image enhancement algorithm using a statistical model for pixel value error, *Henry G. Dietz, University of Kentucky (United States)* [view abstract]

09:15 COIMG-152
Blind estimation of noise level based on pixels values prediction, *Mykola Ponomarenko[1], Oleksandr Miroshnichenko[2], Vladimir Lukin[2], and Karen Egiazarian[1]; [1]Tampere University (Finland) and [2]National Aerospace University (Ukraine)* [view abstract]

Computational Chemical Imaging I

Session Chairs: Ji-Xin Cheng, Boston University (United States) and Garth Simpson, Purdue University (United States)

10:00 – 11:00

Blue Room

10:00 COIMG-163

Computational chemical imaging with deep UV microscopy [PRESENTATION-ONLY], *Francisco E. Robles, Georgia Tech and Emory University (United States)* [view abstract]

10:15 COIMG-164

Advances in diagnostics with mid-IR photothermal spectroscopic imaging [PRESENTATION-ONLY], *Chalapathi Cajjela, Rupali Mankar, Ragib Ishrak, Sharmin Afrose, Xinyu Wu, Camille Artur, David Mayerich, and Rohith Reddy, University of Houston (United States)* [view abstract]

10:30 COIMG-165

Computational label-free microscopy [PRESENTATION-ONLY], *Lei Tian, Boston University (United States)* [view abstract]

Computational Chemical Imaging II

Session Chairs: Ji-Xin Cheng, Boston University (United States) and Garth Simpson, Purdue University (United States)

15:00 – 16:00

Blue Room

15:00 COIMG-175

Deep learning stimulated Raman scattering microscopy [PRESENTATION-ONLY], *Haonan Lin and Ji-Xin Cheng, Boston University (United States)* [view abstract]

15:15 COIMG-176

Spectral super-resolution using device-informed machine learning [PRESENTATION-ONLY], *Yuhyun Ji, Sang Mok Park, Yunsang Kwak, and Young L. Kim, Purdue University (United States)* [view abstract]

15:30 COIMG-177
Multi-agent consensus equlibrium (MACE) for improving chemical structure determination [PRESENTATION-ONLY], *Jiayue Rong, Garth Simpson, Gregery T. Buzzard, Lyudmila Slipchenko, and Charles A. Bouman, Purdue University (United States)* [view abstract]

15:45 COIMG-178
Multi-agent consensus equilibrium (MACE) in molecular spectral analysis [PRESENTATION-ONLY], *Ziyi Cao, James Ulcickas, Charles A. Bouman, Lyudmila Slipchenko, Gregery T. Buzzard, and Garth Simpson, Purdue University (United States)* [view abstract]

Methods in Computational Imaging I

Session Chairs: Charles Bouman, Purdue University (United States) and Gregery Buzzard, Purdue University (United States)
16:15 – 17:15

Blue Room

16:15 COIMG-179
Drone object detection using RGB/IR fusion, *Lizhi Yang, Ruhang Ma, and Avideh Zakhor, University of California, Berkeley (United States)* [view abstract]

16:30 COIMG-416
Visual vibration tomography: Estimating interior material properties from monocular video [PRESENTATION-ONLY], *Berthy Feng, Alexander Ogren, Chiara Dararío, and Katherine L. Bouman, California Institute of Technology (United States)* [view abstract]

16:45 COIMG-417
Deep radio interferometric imaging with POLISH: DSA-2000 and weak lensing [PRESENTATION-ONLY], *Liam Connor, Gregg W. Hallinan, Vikram Ravi, and Katherine L. Bouman, California Institute of Technology (United States)* [view abstract]

17:00 COIMG-418

End-to-end sequential sampling and reconstruction for MR imaging [PRESENTATION-ONLY],
Zihui Wu[1], Tianwei Yin[2], He Sun[1], Adrian Dalca[3], Yisong Yue[1], and Katherine L. Bouman[1]; [1]California Institute of Technology, [2]The University of Texas at Austin, and [3]Harvard Medical School (United States) [view abstract]

WEDNESDAY 19 JANUARY 2022

IS&T Awards & PLENARY: In situ Mobility for Planetary Exploration: Progress and Challenges

07:00 – 08:15

This year saw exciting milestones in planetary exploration with the successful landing of the Perseverance Mars rover, followed by its operation and the successful technology demonstration of the Ingenuity helicopter, the first heavier-than-air aircraft ever to fly on another planetary body. This plenary highlights new technologies used in this mission, including precision landing for Perseverance, a vision coprocessor, new algorithms for faster rover traverse, and the ingredients of the helicopter. It concludes with a survey of challenges for future planetary mobility systems, particularly for Mars, Earth's moon, and Saturn's moon, Titan.

Larry Matthies, Jet Propulsion Laboratory (United States)

Larry Matthies received his PhD in computer science from Carnegie Mellon University (1989), before joining JPL, where he has supervised the Computer Vision Group for 21 years, the past two coordinating internal technology investments in the Mars office. His research interests include 3-D perception, state estimation, terrain classification, and dynamic scene analysis for autonomous navigation of unmanned vehicles on Earth and in space. He has been a principal investigator in many programs involving robot vision and has initiated new technology developments that impacted every US Mars surface mission since 1997, including visual navigation algorithms for rovers, map matching algorithms for precision landers, and autonomous navigation hardware and software architectures for rotorcraft. He is a Fellow of the IEEE and was a joint winner in 2008 of the IEEE's Robotics and Automation Award for his contributions to robotic space exploration.

Computational Imaging XX Posters

08:20 – 09:20

EI Symposium

Poster interactive session for all conferences authors and attendees.

COIMG-185

P-02: Improvement of aerial image by simulations, *Katsunari Ashimine[1], Munemitsu Abe[1], and Kazuhiro Wako[2]; [1]Alps Alpine Co., Ltd. and [2]National Institute of Technology, Sendai College (Japan)* [view abstract]

Neural Networks for Computational Imaging I

Session Chairs: Charles Bouman, Purdue University (United States) and Gregery Buzzard, Purdue University (United States)

09:30 – 10:30

Blue Room

09:30 COIMG-217

Image denoising with control over deep network hallucination, *Qiyuan Liang, Florian Cassayre, Haley Owsianko, Majed El Helou, and Sabine Süsstrunk, École Polytechnique Fédérale de Lausanne (EPFL) (Switzerland)* [view abstract]

09:45 COIMG-218

FiveNet: Joint image demosaicing, denoising, deblurring, super-resolution, and clarity enhancement, *Mykola Ponomarenko[1], Vladimir Marchuk[2], and Karen Egiazarian[1]; [1]Tampere University (Finland) and [2]Don State Technical University (Russian Federation)* [view abstract]

10:00 COIMG-219

Transfer learning for no-reference image quality metrics using large temporary image sets, *Sheyda Ghanbaralizadeh Bahnemiri, Mykola Ponomarenko, and Karen Egiazarian, Tampere University (Finland)* [view abstract]

10:15 COIMG-220

Recognition aware learned image compression (Invited), *Maxime Kawawa-Beaudan, Ryan Roggenkemper, and Avideh Zakhor, University of California, Berkeley (United States)* [view abstract]

Neural Networks for Computational Imaging II

Session Chairs: Charles Bouman, Purdue University (United States) and Gregery Buzzard, Purdue University (United States)

10:50 – 11:50

Blue Room

10:50 COIMG-226

Deep generative priors for imaging ptycho-tomography [PRESENTATION-ONLY], *Selin Aslan[1], Viktor Nikitin[2], Zhengchun Liu[2], Tekin Bicer[2], Sven Leyffer[2], and Doga Gursoy[2]; [1]Virginia Tech and [2]Argonne National Laboratory (United States)* [view abstract]

11:05 COIMG-227

Fully RNN for knee ligament tear classification and localization in MRI scans, *Kaiyue Zhu[1], Ying Chen[1], Xu Ouyang[1], Gregory White[2], and Gady Agam[1]; [1]Illinois Institute of Technology and [2]Rush Medical College (United States)* [view abstract]

11:20 COIMG-228

Correction filter for single image super-resolution: Robustifying off-the-shelf deep super-resolvers [PRESENTATION-ONLY], *Shady Abu-Hussein, Tel Aviv University (Israel)* [view abstract]

11:35 COIMG-229

Multiresolution DECOLOR for camouflaged moving foreground detection using a redundant wavelet transform, *Zoe Fowler[1], James Fowler[2], and Agnieszka Miguel[3]; [1]Georgia Institute of Technology, [2]Mississippi State University, and [3]Seattle University (United States)* [view abstract]

Methods in Computational Imaging II

Session Chairs: Charles Bouman, Purdue University (United States) and Gregery Buzzard, Purdue University (United States)
15:00 – 16:00

Blue Room

15:00 COIMG-238
Structural biology by cryo-EM: From in vitro to in situ structures [PRESENTATION-ONLY], *Wen Jiang, Purdue University (United States)* [view abstract]

15:15 COIMG-239
Chemically selective imaging by fluorescence-detected photothermal mid-infrared microscopy [PRESENTATION-ONLY], *Aleksandr Razumtcev, Minghe Li, and Garth Simpson, Purdue University (United States)* [view abstract]

15:30 COIMG-240
A Good RAP: Converting between mismatched backprojector and modified prior model [PRESENTATION-ONLY], *Gregery T. Buzzard[1], Emma J. Reid[2], and Charles A. Bouman[1]; [1]Purdue University and [2]Oak Ridge National Laboratory (United States)* [view abstract]

15:45 COIMG-241
Computational field sensor for aperture synthesis [PRESENTATION-ONLY], *Casey J. Pellizzari[1], Timothy Bate[1], David Strong[2], and Mark Spencer[3]; [1]United States Air Force Academy, [2]Strong Inc., and [3]Air Force Research Laboratory (United States)* [view abstract]

Methods in Computational Imaging III

Session Chairs: Charles Bouman, Purdue University (United States) and Gregery Buzzard, Purdue University (United States)
16:15 – 17:15

Blue Room

16:15 COIMG-247
OldVSR: A model for the video super-resolution and restoration of old real-world TV series, *Tony Nokap Park and Taeyoung Na, SK Telecom (Republic of Korea)* [view abstract]

16:30 COIMG-248
Accurate measurement of charge density in nanoscale particles using an aperture optimization of Fourier based phase reconstruction, *Takuma Okada, Yoshihiro Midoh, Koji Nakamae, and Noriyuki Miura, Osaka University (Japan)* [view abstract]

16:45 COIMG-249
Jeweler: A Python module for searching binary sequences optimized for coded aperture [PRESENTATION-ONLY], *Daniel J. Ching, Argonne National Laboratory (United States)* [view abstract]

17:00 COIMG-250
What is the cost of applying a constraint in least squares? [PRESENTATION-ONLY], *Ramakrishna Kakarala and Jun Wei, Omnivision Technologies (United States)* [view abstract]

THURSDAY 20 JANUARY 2022

Autonomous Science

Session Chairs: Doga Gursoy, Argonne National Laboratory Advanced Photon Source (United States) and Benji Maruyama, Air Force Research Laboratory (United States)
10:00 – 11:00

Blue Room

10:00 COIMG-280

Physical discovery in automated scanning probe and electron microscopy (Invited) [PRESENTATION-ONLY], *Sergei V. Kalinin, Oak Ridge National Laboratory (United States)* [view abstract]

10:15 COIMG-281

Domain-aware Gaussian processes and high-performance mathematical optimization for optimal autonomous data acquisition (Invited) [PRESENTATION-ONLY], *Marcus M. Noack, Lawrence Berkeley National Laboratory (United States)* [view abstract]

10:30 COIMG-282

Active learning for jump regression estimation with applications to materials discovery [PRESENTATION-ONLY], *Chiwoo Park[1], Peihua Qiu[1], Jennifer Carpena-Nunez[2], Rahul Rao[2], Michael Susner[2], and Benji Maruyama[2]; [1]Florida State University and [2]Air Force Research Laboratory (United States)* [view abstract]

10:45 COIMG-283

Constrained matrix factorization enabling real-time insights of in situ and high-throughput experiments [PRESENTATION-ONLY], *Phillip M. Maffettone[1], Aidan C. Daly[2], and Daniel Olds[1]; [1]Brookhaven National Laboratory and [2]Flatiron Institute (United States)* [view abstract]

Latent Fields in Additive Manufacturing: From Sensing to Reconstruction I

Session Chairs: Megna Shah, Air Force Research Laboratory (United States); Jeff Simmons, Air Force Research Laboratory (United States); and Amir Ziabari, Oak Ridge National Laboratory (United States)

15:00 – 16:00

Blue Room

15:00 COIMG-293

Opportunities and challenges in metallic additive manufacturing [PRESENTATION-ONLY],

Edwin J. Schwalbach, Air Force Research Laboratory (United States) [view abstract]

15:15 COIMG-294
Computer vision techniques for additive manufacturing quality control [PRESENTATION-ONLY], *Vincent Paquit, Luke Scieme, Michael Sprayberry, and James Haley, Oak Ridge National Laboratory (United States)* [view abstract]

15:30 COIMG-295
Physics based compressive sensing for melt pool monitoring in laser powder bed fusion [PRESENTATION-ONLY], *Yanglong Lu and Yan Wang, Georgia Institute of Technology (United States)* [view abstract]

15:45 COIMG-296
Challenges and progress in physical tomographic reconstruction of light doses for additive manufacturing [PRESENTATION-ONLY], *Vishal Bansal[1], Indrasen Bhattacharya[1], Kyle M. Champley[2], Erika Fong[2], Chi C. Li[1], Robert McLeod[3], Charles Rackson[3], Maxim Shusteff[2], Hayden Taylor[1], and Joseph Toombs[1]; [1]University of California, Berkeley, [2]Lawrence Livermore National Laboratory, and [3]University of Colorado (United States)* [view abstract]

Latent Fields in Additive Manufacturing: From Sensing to Reconstruction II

Session Chairs: Megna Shah, Air Force Research Laboratory (United States); Jeff Simmons, Air Force Research Laboratory (United States); and Amir Ziabari, Oak Ridge National Laboratory (United States)
16:15 – 17:15

Blue Room
16:15 COIMG-304
Linking processing to microstructure development under additive manufacturing conditions [PRESENTATION-ONLY], *Amy J. Clarke, Colorado School of Mines (United States)* [view abstract]

16:30 COIMG-306

Inferring surface properties of oscillating fluids from video by inversion of physics models,
Bob Price[1], Svyatoslav Korneev[1], Adrian Lew[2], Christoforos Somarakis[1], and Raja Bala[3]; [1]Palo Alto Research Center Incorporated, [2]Stanford University, and [3]Amazon (United States) [view abstract]

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