

UED Opportunities for Dynamical Imaging of Materials

Report of Contributions

Contribution ID: 1

Type: **not specified**

Introduction

Contribution ID: 2

Type: **not specified**

Talk about Subject X

Contribution ID: 3

Type: **not specified**

MA00 - Ellen Cerreta, LANL

Monday, 6 November 2023 08:00 (30 minutes)

Session Classification: Session MA - Chair: Evgenya Simakov

Contribution ID: 4

Type: **not specified**

MA01 - "Overview of next-generation accelerator capabilities at LANL" Kip Bishofberger, LANL

Monday, 6 November 2023 08:30 (20 minutes)

Session Classification: Session MA - Chair: Evgenya Simakov

Contribution ID: 5

Type: **not specified**

MA02 - "Opportunities for gas phase ultrafast electron diffraction" Thomas Wolf, SLAC

Monday, 6 November 2023 08:50 (20 minutes)

Session Classification: Session MA - Chair: Evgenya Simakov

Contribution ID: 6

Type: **not specified**

MB01 - "Ultrafast electron-diffraction studies of materials under extreme conditions" Mianzhen Mo, SLAC

Monday, 6 November 2023 10:40 (20 minutes)

Session Classification: Session MB - Chair: Nicholas Sirica

Contribution ID: 7

Type: **not specified**

MB02 - "Imaging and Diffraction of Metals and Alloys with Processing or Deformation" Amy Clarke, LANL

Monday, 6 November 2023 11:00 (20 minutes)

Session Classification: Session MB - Chair: Nicholas Sirica

Contribution ID: 8

Type: **not specified**

MB03 - "Tracking Symmetry Breaking Dynamics via Tailored Ultrafast Probes" Robert Kaindl, ASU

Monday, 6 November 2023 11:20 (20 minutes)

Session Classification: Session MB - Chair: Nicholas Sirica

Contribution ID: 9

Type: **not specified**

MC01 - "Lab- and synchrotron-based X-ray tomographic imaging of pre, in situ, and post damage of polymers and metals" Brian Patterson, LANL

Monday, 6 November 2023 14:00 (20 minutes)

Session Classification: Session MC - Chair: Reeju Pokahrel

Contribution ID: 10

Type: **not specified**

MC02 - "Potential for multi-peak, Bragg coherent diffraction imaging with ultrafast electrons", Richard Sandberg, BYU

Monday, 6 November 2023 14:20 (20 minutes)

Session Classification: Session MC - Chair: Reemu Pokahrel

Contribution ID: 11

Type: **not specified**

MD01 - "Bayesian inference and deterministic anisotropy for molecular geometry retrieval in gas phase diffraction experiments" Kareem Hegazy, Stanford University

Monday, 6 November 2023 16:00 (20 minutes)

Session Classification: Session MD - Chair: Rodney McCabe

Contribution ID: 12

Type: **not specified**

MD02 - "Coherent lattice dynamics and charge density wave transitions unveiled by ultrafast electron diffraction" Yifan Su, MIT

Monday, 6 November 2023 16:20 (20 minutes)

Session Classification: Session MD - Chair: Rodney McCabe

Contribution ID: 13

Type: **not specified**

TA01 - "Ultrafast Electron Diffraction of Density Waves and Other Superlattices" Anshul Kogar, UCLA

Tuesday, 7 November 2023 08:00 (20 minutes)

Session Classification: Session TA - Chair: Yongqiang Wang

Contribution ID: 14

Type: **not specified**

TA02 - "Probing ultrafast dynamics via ultrafast operando diffraction" Aaron Lindenberg, SLAC

Tuesday, 7 November 2023 08:20 (20 minutes)

Session Classification: Session TA - Chair: Yongqiang Wang

Contribution ID: 15

Type: **not specified**

TA03 - "Potential of ultrafast electron diffraction for studying materials dynamics" Reeju Pokharel, LANL

Tuesday, 7 November 2023 08:40 (20 minutes)

Session Classification: Session TA - Chair: Yongqiang Wang

Contribution ID: 16

Type: **not specified**

**TB01 - "Visualizing phonon dynamics with MeV-UED
and materials' ultrafast behavior under RF excitation"
Yimei Zhu, BNL**

Tuesday, 7 November 2023 10:30 (20 minutes)

Session Classification: Session TB - Chair: Pamela Bowlan

Contribution ID: 17

Type: **not specified**

**TB02 - "Data Analysis and Control of a MeV Ultrafast
Electron Diffraction System using Machine Learning"
Sandra Biedron, UNM**

Tuesday, 7 November 2023 10:50 (20 minutes)

Session Classification: Session TB - Chair: Pamela Bowlan

Contribution ID: 18

Type: **not specified**

TB03 - "Probing ultrafast dynamics in charge density wave materials with MeV-UED" Hugo Wang, SLAC

Tuesday, 7 November 2023 11:10 (20 minutes)

Session Classification: Session TB - Chair: Pamela Bowlan

Contribution ID: 19

Type: **not specified**

TC01 - "MeV UED: a brief overview and recent developments at Tsinghua" - Renkai Li, Tsinghua University

Tuesday, 7 November 2023 14:00 (30 minutes)

Session Classification: Session TC - Chair: Haoran Xu

Contribution ID: 20

Type: **not specified**

TC02 - "UED at Cornell with low emittance photocathodes" Jared Maxson, Cornell

Tuesday, 7 November 2023 14:30 (20 minutes)

Session Classification: Session TC - Chair: Haoran Xu

Contribution ID: 21

Type: **not specified**

WA01 - "Cryo-RF injector development for UED instrument", James Rosenzweig, UCLA

Session Classification: Session WA - Chair: Joel England

Contribution ID: 22

Type: **not specified**

WA02 - "LANL's CARIE MeV Photoinjector Test Facility" - Evgenya Simakov, LANL

Wednesday, 8 November 2023 08:00 (20 minutes)

Session Classification: Session WA - Chair: Joel England

Contribution ID: 23

Type: **not specified**

WA03 - "CW RF gun considerations for UED application", John Lewellen, LANL

Wednesday, 8 November 2023 08:20 (20 minutes)

Session Classification: Session WA - Chair: Joel England

Contribution ID: 24

Type: **not specified**

WB01 - "Ultrafast Lasers for UED", Henry Kapteyn, UC Boulder

Wednesday, 8 November 2023 10:30 (30 minutes)

Session Classification: Session WB - Chair: Pietro Musumeci

Contribution ID: 25

Type: **not specified**

WB02 - "Detectors for MeV UED", Peter Denes, LBNL

Wednesday, 8 November 2023 11:00 (20 minutes)

Session Classification: Session WB - Chair: Pietro Musumeci

Contribution ID: 26

Type: **not specified**

**WB03 - "An overview of ongoing and prospective
R&D activities at HiRES to advance MeV-UED
instruments" Wei Liu, Dan Wang, LBNL**

Wednesday, 8 November 2023 11:20 (20 minutes)

Session Classification: Session WB - Chair: Pietro Musumeci

Contribution ID: 27

Type: **not specified**

TC03 - "SLAC MeV-UED Experiences", Xiaozhe Shen, SLAC

Tuesday, 7 November 2023 14:50 (20 minutes)

Session Classification: Session TC - Chair: Haoran Xu

Contribution ID: 28

Type: **not specified**

TC04 - Discussion

Tuesday, 7 November 2023 15:10 (20 minutes)

Session Classification: Session TC - Chair: Haoran Xu

Contribution ID: 29

Type: **not specified**

TD01 - "UED at beam energies above 5 MeV" Pietro Musumeci, UCLA

Tuesday, 7 November 2023 16:00 (20 minutes)

Session Classification: Session TD - Chair: Kip Bishofberger

Contribution ID: 30

Type: **not specified**

TD02 - "Current status of MeV-UED/UEM and electron imaging optics development at BNL" Xi Yang, BNL

Tuesday, 7 November 2023 16:20 (20 minutes)

Session Classification: Session TD - Chair: Kip Bishofberger

Contribution ID: 31

Type: **not specified**

TD03 - "RUEDI and UED Beamline Design for Optimising Temporal Resolution", Julian McKenzie, Daresbury

Tuesday, 7 November 2023 16:40 (20 minutes)

Session Classification: Session TD - Chair: Kip Bishofberger

Contribution ID: 32

Type: **not specified**

WA04 - "Modern cathode materials for LCLS-II HE and other applications", John Smedley, SLAC

Wednesday, 8 November 2023 08:40 (20 minutes)

Session Classification: Session WA - Chair: Joel England

Contribution ID: 33

Type: **not specified**

**WA05 - Eric Montgomery "Development of
UED/UEM photoguns, photocathode prep systems,
compact magnets, and RF pulsed from 0.1-10 MeV",
Eric Montgomery (Euclid)**

Wednesday, 8 November 2023 09:00 (20 minutes)

Session Classification: Session WA - Chair: Joel England

Contribution ID: 34

Type: **not specified**

WB04 - Discussion

Wednesday, 8 November 2023 11:40 (20 minutes)

Session Classification: Session WB - Chair: Pietro Musumeci

Contribution ID: 35

Type: **not specified**

MA03 - "Outstanding Challenges in Actinide Chemistry and Materials" Ping Yang, LANL

Monday, 6 November 2023 09:10 (20 minutes)

Session Classification: Session MA - Chair: Evgenya Simakov

Contribution ID: 36

Type: **not specified**

MA04 - "Ultrafast spin-shear coupling in van der Waals antiferromagnets" Haidan Wen, ANL

Monday, 6 November 2023 09:30 (20 minutes)

Session Classification: Session MA - Chair: Evgenya Simakov

Contribution ID: 37

Type: **not specified**

Discussion

Monday, 6 November 2023 09:50 (10 minutes)

Session Classification: Session MA - Chair: Evgenya Simakov

Contribution ID: 38

Type: **not specified**

MB04 - "Using Xrays and Protons to Understand Damage and Failure in Materials" Saryu Fensin, LANL

Monday, 6 November 2023 11:40 (20 minutes)

Session Classification: Session MB - Chair: Nicholas Sirica

Contribution ID: **39**

Type: **not specified**

Discussion

Monday, 6 November 2023 12:00 (30 minutes)

Session Classification: Session MB - Chair: Nicholas Sirica

Contribution ID: 40

Type: **not specified**

Discussion

Monday, 6 November 2023 14:40 (50 minutes)

Session Classification: Session MC - Chair: Reeru Pokahrel

Contribution ID: 41

Type: **not specified**

Discussion

Monday, 6 November 2023 16:40 (20 minutes)

Session Classification: Session MD - Chair: Rodney Mccabe

Contribution ID: 42

Type: **not specified**

TA04 - "Opportunities for studying freely suspended liquid films by ultrafast electron diffraction" Alan Hurd, LANL

Tuesday, 7 November 2023 09:00 (20 minutes)

Session Classification: Session TA - Chair: Yongqiang Wang

Contribution ID: 43

Type: **not specified**

Discussion

Tuesday, 7 November 2023 09:20 (40 minutes)

Session Classification: Session TA - Chair: Yongqiang Wang

Contribution ID: 44

Type: **not specified**

TB04 - "Optical techniques for measuring FEL pulses", Pamela Bowlan, LANL

Tuesday, 7 November 2023 11:30 (20 minutes)

Session Classification: Session TB - Chair: Pamela Bowlan

Contribution ID: 45

Type: **not specified**

Discussion

Tuesday, 7 November 2023 12:10 (20 minutes)

Session Classification: Session TB - Chair: Pamela Bowlan

Contribution ID: 46

Type: **not specified**

WA06 - Discussion

Wednesday, 8 November 2023 09:20 (40 minutes)

Session Classification: Session WA - Chair: Joel England

Contribution ID: 47

Type: **not specified**

TB05 - "Microcalorimeter Detectors: Broadband, Efficient, High Energy-Resolution Detectors for Materials Science" Matthew Carpenter, LANL

Tuesday, 7 November 2023 11:50 (20 minutes)

Session Classification: Session TB - Chair: Pamela Bowlan

Contribution ID: 48

Type: **not specified**

MB00 - Session Introduction, Nicholas Sirica, LANL

Monday, 6 November 2023 10:30 (10 minutes)

Session Classification: Session MB - Chair: Nicholas Sirica