

Photocathode Physics for Photoinjectors 2012

Report of Contributions

Contribution ID: 0

Type: **not specified**

Workshop Welcome

Monday, October 8, 2012 8:30 AM (10 minutes)

Presenter: BAZAROV, Ivan (Cornell)

Session Classification: Session 1 - Workshop Welcome, Reviews

Contribution ID: 1

Type: **not specified**

Review of recent European Cathode Workshop

Monday, October 8, 2012 8:40 AM (25 minutes)

Presenter: DOWELL, David (SLAC)

Session Classification: Session 1 - Workshop Welcome, Reviews

Contribution ID: 2

Type: **not specified**

Review of recent U Chicago photocathode/detector workshop

Monday, October 8, 2012 9:05 AM (25 minutes)

Presenter: SMEDLEY, John (BNL)

Session Classification: Session 1 - Workshop Welcome, Reviews

Contribution ID: 3

Type: **not specified**

Memories of the previous P3 workshop

Monday, October 8, 2012 9:30 AM (15 minutes)

Presenter: RAO, Triveni (BNL)

Session Classification: Session 1 - Workshop Welcome, Reviews

Contribution ID: 4

Type: **not specified**

Measurements of transverse momentum of photoelectrons from metals and alkali antimonide semiconductors

Monday, October 8, 2012 10:15 AM (25 minutes)

Presenter: VECCHIONE, Theo (LBNL)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 5

Type: **not specified**

Measuring the growth of alkali antimonides using in-situ XRD and x-ray reflectivity

Monday, October 8, 2012 11:05 AM (25 minutes)

Presenter: SCHUBERT, Susanne (HBZ)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 6

Type: **not specified**

Open Discussion or Contributed Talks

Monday, October 8, 2012 11:30 AM (30 minutes)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 7

Type: **not specified**

Measurement of the chemistry and growth of alkali antimonides using in-situ AFM and XPS

Monday, October 8, 2012 10:40 AM (25 minutes)

Presenter: OSES, Miguel Ruiz (BNL)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 8

Type: **not specified**

Fabrication, characterization and use of alkali antimonides in a dc gun

Monday, October 8, 2012 1:00 PM (25 minutes)

Presenter: CULTRERA, Luca (Cornell)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 9

Type: **not specified**

MBE growth of GaAs photocathodes for the Cornell ERL photoinjector and effect of roughness on emittance

Monday, October 8, 2012 1:25 PM (25 minutes)

Presenter: SCHAFF, Bill (Cornell)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: **10**

Type: **not specified**

Open Discussion or Contributed Talks

Monday, October 8, 2012 2:30 PM (30 minutes)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 11

Type: **not specified**

Surface characterization of GaAs photocathodes and high current operation experience

Monday, October 8, 2012 1:50 PM (25 minutes)

Presenter: HERNANDEZ-GARCIA, Carlos (JLAB)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 12

Type: **not specified**

Reduction of emittance from metals to less than thermal

Monday, October 8, 2012 3:40 PM (15 minutes)

Presenter: FENG, Jun (LBNL)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 13

Type: **not specified**

Growth and operation of Pb/Nb phtocathodes in SRF gun

Monday, October 8, 2012 3:55 PM (15 minutes)

Presenter: SCHUBERT, Susanne (HZB)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 14

Type: **not specified**

Cathode characterization and analysis at DESY

Monday, October 8, 2012 4:10 PM (15 minutes)

Presenter: LEDERER, Sven (DESY)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 15

Type: **not specified**

Workfunction and Quantum Efficiency studies on Cesium Telluride

Monday, October 8, 2012 4:25 PM (15 minutes)

Presenter: HARKAY, Katherine (ANL)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: **16**

Type: **not specified**

Open Discussion or Contributed Talks

Monday, October 8, 2012 5:25 PM (35 minutes)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 17

Type: **not specified**

Monte Carlo Scattering Corrections to Moments-Based Emission Models

Tuesday, October 9, 2012 9:20 AM (25 minutes)

Presenter: MONTGOMERY, Eric (UMD)

Session Classification: Session 3 - Photocathode physics I: new insights in theory and modeling

Contribution ID: **18**

Type: **not specified**

KEK

Presenter: TBD (KEK)

Contribution ID: **19**

Type: **not specified**

Models of effect of roughness on emittance

Tuesday, October 9, 2012 10:15 AM (25 minutes)

Presenter: DOWELL, Dave (SLAC)

Session Classification: Session 3 - Photocathode physics I: new insights in theory and modeling

Contribution ID: 20

Type: **not specified**

Cs surface effects

Presenter: TBD (UMD/NRL)

Contribution ID: 21

Type: **not specified**

One-step model of photoemission and extensions to the three-step model

Tuesday, October 9, 2012 10:40 AM (25 minutes)

Presenter: WAN, Weishi (LBNL)

Session Classification: Session 3 - Photocathode physics I: new insights in theory and modeling

Contribution ID: 22

Type: **not specified**

Monte-Carlo simulations of Charge transport and photoemission from GaAs photocathodes

Tuesday, October 9, 2012 8:30 AM (25 minutes)

Presenter: KARKARE, Siddharth (Cornell)

Session Classification: Session 3 - Photocathode physics I: new insights in theory and modeling

Contribution ID: 23

Type: **not specified**

Modeling Electron Emission from Diamond-Amplified cathodes

Tuesday, October 9, 2012 8:55 AM (25 minutes)

Presenter: DIMITROV, D. A. (TechX)

Session Classification: Session 3 - Photocathode physics I: new insights in theory and modeling

Contribution ID: 24

Type: **not specified**

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Presenter: TBD (UCLA)

Contribution ID: 25

Type: **not specified**

Open Discussion

Tuesday, October 9, 2012 9:45 AM (15 minutes)

Session Classification: Session 3 - Photocathode physics I: new insights in theory and modeling

Contribution ID: 26

Type: **not specified**

Redesigning Cs₂Te: Workfunction Lowering and Quantum-Efficiency Preservation via Acetylation

Tuesday, October 9, 2012 1:00 PM (15 minutes)

Presenter: HARKAY, Katherine (ANL)

Session Classification: Session 4 - Photocathode physics II: towards photocathode material engineering

Contribution ID: 27

Type: **not specified**

Plasmonic photocathodes

Presenter: SCHREODER, Andreas (UI Physics)

Contribution ID: 28

Type: **not specified**

Surface science techniques

Tuesday, October 9, 2012 1:15 PM (15 minutes)

Presenter: HESS, Wayne (PNNL)

Session Classification: Session 4 - Photocathode physics II: towards photocathode material engineering

Contribution ID: 29

Type: **not specified**

Nano-cavity plasmonic photocathodes

Tuesday, October 9, 2012 3:15 PM (15 minutes)

Presenter: POLYAKOV, Alex (LBNL)

Session Classification: Session 4 - Photocathode physics II: towards photocathode material engineering

Contribution ID: 30

Type: **not specified**

Grating based plasmonic photocathodes

Tuesday, October 9, 2012 3:30 PM (15 minutes)

Presenter: MUSUMECI, Pietro (UCLA)

Session Classification: Session 4 - Photocathode physics II: towards photocathode material engineering

Contribution ID: 31

Type: **not specified**

Genetic optimization technique for bandgap tuning

Presenter: MONTANO, Ines (SNL)

Contribution ID: 32

Type: **not specified**

Open Discussion or Contributed Talks

Tuesday, October 9, 2012 2:40 PM (20 minutes)

Session Classification: Session 4 - Photocathode physics II: towards photocathode material engineering

Contribution ID: 33

Type: **not specified**

Update on the photocathode wiki-project

Wednesday, October 10, 2012 9:10 AM (10 minutes)

Presenter: KARKARE, Siddharth (Cornell)

Session Classification: Session 5 - Future outlook and collaborations

Contribution ID: 34

Type: **not specified**

Cathode production and supply, useful things to track, photocathode website

Wednesday, October 10, 2012 8:30 AM (25 minutes)

Presenter: SERTORE, Daniele (INFN)

Session Classification: Session 5 - Future outlook and collaborations

Contribution ID: 35

Type: **not specified**

LBNL gun as a test venue for various cathodes

Wednesday, October 10, 2012 8:55 AM (15 minutes)

Presenter: SANNIBALE, Fernando (LBNL)

Session Classification: Session 5 - Future outlook and collaborations

Contribution ID: 36

Type: **not specified**

Open Discussion for Future Collaboration

Wednesday, October 10, 2012 11:00 AM (1 hour)

Session Classification: Session 5 - Future outlook and collaborations

Contribution ID: 37

Type: **not specified**

Outlook and 2-year plans from each group (1 slide in advance)

Wednesday, October 10, 2012 10:30 AM (30 minutes)

Session Classification: Session 5 - Future outlook and collaborations

Contribution ID: **38**

Type: **not specified**

Summary of the workshop

Wednesday, October 10, 2012 9:50 AM (25 minutes)

Presenter: SINCLAIR, Charlie

Session Classification: Session 5 - Future outlook and collaborations

Contribution ID: 39

Type: **not specified**

Open Discussion for Future Collaborations

Contribution ID: 40

Type: **not specified**

Development of high performance photocathodes for microscopy and accelerators

Monday, October 8, 2012 3:15 PM (25 minutes)

Presenter: JIN, Xiuguang (Nagoya University)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 41

Type: **not specified**

DMD-Based Quantum Efficiency Mapping and Self-Healing of Hybrid Diffuser Dispensers

Monday, October 8, 2012 4:40 PM (15 minutes)

Presenter: MONTGOMERY, Eric (UMD)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 42

Type: **not specified**

Open Discussion or Contributed Talks

Tuesday, October 9, 2012 11:45 AM (15 minutes)

Session Classification: Session 3 - Photocathode physics I: new insights in theory and modeling

Contribution ID: 43

Type: **not specified**

Open Discussion

Tuesday, October 9, 2012 3:45 PM (15 minutes)

Session Classification: Session 4 - Photocathode physics II: towards photocathode material engineering

Contribution ID: 44

Type: **not specified**

Open Discussion or Contributed Talks

Wednesday, October 10, 2012 9:30 AM (20 minutes)

Session Classification: Session 5 - Future outlook and collaborations

Contribution ID: 45

Type: **not specified**

Modeling the Resupply, Diffusion, and Evaporation of Cesium Based Dispenser Photocathodes

Tuesday, October 9, 2012 11:05 AM (25 minutes)

Presenter: PAN, Zhigang (NRL)

Session Classification: Session 3 - Photocathode physics I: new insights in theory and modeling

Contribution ID: 46

Type: **not specified**

Electron effective mass: Emittance and efficiency

Tuesday, October 9, 2012 1:30 PM (25 minutes)

Presenter: SCHROEDER, Andreas (UIC)

Session Classification: Session 4 - Photocathode physics II: towards photocathode material engineering

Contribution ID: 47

Type: **not specified**

Operation of the High-Charge PHIN RF Photoinjector with Cs3Sb Cathodes

Monday, October 8, 2012 4:55 PM (15 minutes)

Primary author: HESSLER, Christoph (CERN, Geneva, Switzerland)

Co-authors: CHEVALLAY, Eric (CERN, Geneva, Switzerland); DOEBERT, Steffen (CERN, Geneva, Switzerland); FEDOSSEEV, Valentin (CERN, Geneva, Switzerland)

Presenter: HESSLER, Christoph (CERN, Geneva, Switzerland)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 48

Type: **not specified**

Status OF CsBr Photocathodes

Tuesday, October 9, 2012 1:55 PM (15 minutes)

Primary author: Dr MALDONADO, Juan (SLAC National Accelerator Laboratory)

Co-authors: Ms TRAUTWEIN, Ann (SLAC National Accelerator Laboratory); Dr DOWELL, David (SLAC National Accelerator Laboratory); Dr CORBETT, Jeffrey (SLAC National Accelerator Laboratory); Dr PIANETTA, Piero (SLAC National Accelerator Laboratory); Mr PARK, Sam (SLAC National Accelerator Laboratory); Dr CLAY, William (Stanford University)

Presenter: Dr MALDONADO, Juan (SLAC National Accelerator Laboratory)

Session Classification: Session 4 - Photocathode physics II: towards photocathode material engineering

Contribution ID: 49

Type: **not specified**

Photocathodes for Rossendorf SRF gun

Monday, October 8, 2012 5:10 PM (15 minutes)

Primary author: Dr XIANG, Rong (Helmholtz-Zentrum Dresden-Rossendorf)

Co-authors: Dr ARNOLD, Andre (Helmholtz-Zentrum Dresden-Rossendorf); Dr TEICHERT, Jochen (Helmholtz-Zentrum Dresden-Rossendorf); Dr MICHEL, Peter (Helmholtz-Zentrum Dresden-Rossendorf); MURCEK, Petr (Helmholtz-Zentrum Dresden-Rossendorf)

Presenter: Dr XIANG, Rong (Helmholtz-Zentrum Dresden-Rossendorf)

Session Classification: Session 2 - New significant developments and relevant measurements

Contribution ID: 54

Type: **not specified**

German-Russian collaboration on high-brightness photocathodes

Wednesday, October 10, 2012 9:20 AM (10 minutes)

Primary authors: SCHMEISSER, Martin (Helmholtz Centre Berlin); Dr KAMPS, Thorsten (Helmholtz Centre Berlin)

Presenter: SCHMEISSER, Martin (Helmholtz Centre Berlin)

Session Classification: Session 5 - Future outlook and collaborations

Contribution ID: 55

Type: **not specified**

Measurements and modeling of space charge assisted photoemission at PITZ

Tuesday, October 9, 2012 11:30 AM (15 minutes)

Primary author: KRASILNIKOV, Mikhail (DESY)

Presenter: KRASILNIKOV, Mikhail (DESY)

Session Classification: Session 3 - Photocathode physics I: new insights in theory and modeling

Contribution ID: 56

Type: **not specified**

Nanostructured Photoelectron Sources for Electron Beamlet Array Generation

Tuesday, October 9, 2012 2:10 PM (15 minutes)

Primary authors: Dr SWANWICK, Michael (Massachusetts Institute of Technology); Dr HOBBS, Richard (Massachusetts Institute of Technology)

Co-authors: Prof. KAERTNER, Franz (Massachusetts Institute of Technology); Prof. BERGGREN, Karl (Massachusetts Institute of Technology); Prof. VELASQUEZ-GARCIA, Luis (Massachusetts Institute of Technology); Mr KEATHLEY, Phillip (Massachusetts Institute of Technology); Dr GRAVES, William (Massachusetts Institute of Technology); Mr YANG, Yujia (Massachusetts Institute of Technology)

Presenters: Dr SWANWICK, Michael (Massachusetts Institute of Technology); Dr HOBBS, Richard (Massachusetts Institute of Technology)

Session Classification: Session 4 - Photocathode physics II: towards photocathode material engineering

Contribution ID: 57

Type: **not specified**

High Aspect Ratio Si Photoelectron Emitter Arrays

Tuesday, October 9, 2012 2:25 PM (15 minutes)

Presenter: KEATHLEY, Donnie (MIT)

Session Classification: Session 4 - Photocathode physics II: towards photocathode material engineering

Contribution ID: 58

Type: **not specified**

K2CsSb cathode tests at JLAB

Monday, October 8, 2012 2:15 PM (15 minutes)

Presenter: RAO, Triveni (BNL)

Session Classification: Session 2 - New significant developments and relevant measurements