

56th ICFA Advanced Beam Dynamics Workshop on Energy Recovery Linacs (ERL 2015)

**Stony Brook, New York, USA
7 – 12 June 2015**

ISBN: 978-1-5108-2019-7

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

License

This work is licensed under a Creative Commons Attribution 3.0 Unported license:
<http://creativecommons.org/licenses/by/3.0/>

You are free to:

Share - Copy and redistribute the material in any medium or format.
Adapt – Remix, transform, and build upon the material for any purpose, even commercially.
The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution – You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

Printed by Curran Associates, Inc. (2016)

Published by:

JACoW - Joint Accelerator Conferences Website
c/o Christine Petit-Jean-Genaz
CERN BE
CH - 1211 Geneva 23

Phone: 41 22 767 32 75
christine.petit-jean-genaz@cern.ch

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

Contents

Preface	i
Poster	i
Group Photo	ii
Contents	iii
Committees	iv
Papers	1
MOPBTH003 – The Femto-Science Factory: A Multi-turn ERL Based Light Source	1
MOPCTH010 – Design Work of the ERL-FEL as the High Intense EUV Light Source	4
MOPDTH014 – Status and Commissioning Results of the R&D ERL at BNL	10
TUIBLH2026 – LHeC ERL Design and Beam-Dynamics Issues	15
TUIBLH2027 – Tracking Studies in eRHIC Energy-Recovery Recirculator	20
TUICLH1030 – Improving the Smoothness of Multialkali Antimonide Photocathodes: An In-Situ X-Ray Reflectivity Study	27
TUICLH2032 – Investigations on Transverse Beam Break Up Using a Recirculated Electron Beam*	30
TUICLH2034 – Linear Microbunching Gain Estimation Including CSR and LSC Impedances in Recirculation Machines	34
TUIDLH1038 – First Beam Characterization of SRF Gun II with a Copper Photocathode	42
TUIDLH2040 – Transverse-emittance Preserving Arc Compressor: Sensitivity to Beam Optics, Charge and Energy	48
WEIALH2048 – Current Measurement and Associated Machine Protection in the ERL at BNL	52
WEIBLH1049 – Current Status of the MESA Project	58
WEIBLH2054 – Operational Experience of CW SRF Injector and Main Linac Cryomodules at the Compact ERL	63
WEICLH1058 – ERL for Low Energy Electron Cooling at RHIC (LReC)	67
WEICLH2062 – Development for Mass Production of Superconducting Cavity By MHI	72
WEICLH2063 – Ultra-Fast Harmonic Resonant Kicker Design for the MEIC Electron Circular Cooler Ring	75
WEIDLH1002 – The Optics of the Low Energy FFAG Cell of the eRHIC Collider Using Realistic Fields	80
WEIDLH2066 – Performance of the Digital LLRF Systems at KEK cERL	84
WEIDLH2068 – Using a 1.3 GHz 20 kW Solid State Amplifier as RF Power Supply for DC-SRF Photo-injector	88
THIALH2069 – Diagnostic Test-Beam-Line for the MESA Injector	91
THPTHL072 – CsK2Sb Photocathode Development for BERLinPro	97
THPTHL073 – Development of a Multialkali Photocathode Preparation System	100
THPCTH075 – Summary of WG1 on Injectors - ERL 2015	103
THPCTH076 – ERL Beam Dynamics and Optics: A Summary of Working Group 2 at the ERL Workshop 2015	107
THPCTH077 – Summary of WG3 on Instrumentation, Controls, and Beam Losses - ERL 2015	111
THPDTH078 – ERL 2015 Summary of Working Group 4 RF and Superconducting RF	115
THPDTH079 – Summary of WG5 on ERL Applications - ERL 2015	121
Appendices	127
List of Authors	127
Institutes List	131