



HIE-EBIS workshop

CERN, 16-17.10.2012



Goal of the workshop

- Get the status updates from existing EBITS and the devices under construction and commissioning.
- Discuss key design features of the devices similar to the planned HIE-EBIS.
- Discuss some design options for the HIE-EBIS.
- Rise our awareness of critical issues for a high-ionization factor EBIS.
- Invite colleagues to combine our efforts.

Goal of the workshop

To be practical

- Concentrate on practical experience, mature or tested technologies and designs.
- Stay on the machine physics rather than experimental physics the machine is needed for.
- Keep in mind the time horizon of a few years for all R&Ds to be started, carried out and concluded.

Workshop schedule. Day I

I.0	09:00	Welcome and formal matters
I.1	09:10	D. Voulot, 20 min HIE-ISOLDE linac upgrade.
I.2	09:30	F. Wenander, 30 min Present REX-ISOLDE charge breeder system.
I.3	10:00	A. Shornikov, 30 min HIE-EBIS design parameters and prerequisite.
	10:30	Coffee break
FT.1	10:45	E. Beebe, 40 min The RHIC EBIS.
FT.2	11:30	S. Schwarz, 40 min The MSU ReA3 EBIS/T
FT.3	12:15	J. Crespo, 40 min EBITs at MPIK
	13:00	Lunch break, 6/2-004
FT.4	14:00	R. Marrs, 30 min The LLNL Super-EBIT
FT.5	14:35	N. Nakamura 30 min Tokyo Super-EBIT.
	15:10	Coffee break
TI.1	15:25	P. Chiggiato, 15 min Advanced vacuum technologies.
TI.2	15:45	J. Crespo, 10 min Vacuum system and cryogenics in HD-type EBIT design.
TI.3	16:00	N. Nakamura, 10 min Cryogenics and vacuum at Tokyo Super-EBIT.
TI.4	16:15	V. Ovsyannikov, 10 min Cryogenics and vacuum in DreEBIT EBITS
TI.5	16:30	S. Kondrashev, 10 min Low-contamination rare and exotic beams
	16:45	TI session discussion
	17:30	End of sessions
	19:00	Social dinner at Coq Rouge, St, Genis

Introduction of
ISOLDE, REX,
HIE-ISOLDE

Introduction of
RHIC, MSU, HD EBITS
and LLNL and Tokyo
Super-EBITs

Advanced vacuum
technologies, their use
in EBITS.
Cryogenics for vacuum
purposes in EBITS

Workshop schedule. Day II

TII.1	09:00	S. Schwarz, 10 min Helmholtz+solenoid configuration at MSU EBIS
TII.2	09:15	R. Marrs, 10 min Ion-Ion cooling at high ionization factors.
TII.3	09:30	A. Pikin, 10 min Acceptance and emittance studies at RHIC EBIS
TII.4	09:45	V. Ovsyannikov, 10 min Acceptance and emittance studies at DreEEBIT.
TII	10:00	TII session discussion
	10:45	Coffee break
TIII.1	11:00	R. Becker, 15 min Can 5 A, 150 keV, 20 kA/cm ² be attained practically in a charge breeder?
TIII.2	11:20	E. Donets, 15 min Can the development from Dubna be applied for an effective high energy high current charge breeder?
TIII.3	11:40	V. Ovsyannikov, 15 min High compression high current guns.
	12:00	Lunch break, R3
TIII.4	13:15	S. Schwarz, 15 min State-of-the-art high compression guns using BaW cathode.
TIII.5	13:35	A. Pikin, 20 min Can the BNL EBIS current density be increased by a factor of 20? IrCe and LaB ₆ cathodes, high-current collector design, experience with large aperture drift tubes.
TIII	14:00	TIII session discussion
	14:45	Coffee break
	15:00	Guided tour of ISOLDE and REX-EBIS
SCS.1	16:30	A. Shornikov, 15 min What we have learned and our next steps
SCS.2	16:45	R. Catherall, 5 min What can CERN / EU offer to the collaborators
SCS	16:50	SCS session discussion
	17:20	End of the workshop

Acceptance and emittance, emittance growth. Ion cooling @ high ionization factors, beam instabilities

High density electron beams: gun layouts, cathodes, operation modes, collecting, stability. Practice and near future development

Summary and collaboration options

A few more points.

- Please let us know if you attend session tomorrow so we reserve a lunch for you. Put the marks in the list.
- If you have not registered for the dinner tonight but want to join – let us know, we check if we can get an extra seat.
- When leaving the auditorium for lunch/tour take care of your valuables, take them with you, or put to Fredrik's office. There are many keys to this room circulating.

Let's introduce ourselves

Dear participants, please shortly introduce yourself to those who don't know you. Please mention:

- Your name
- Your affiliation
- Your subject field/project