

## Lecture „Physik und Technik von Ionenquellen“ Wintersemester 2011/2012

Prof. Dr. Oliver Kester, Dr. Peter Forck

Time: Friday 2-4 pm lecture, 4-5 pm exercise

Room: 2.201a

Date	Topic	Lecturer	Exercise
21.10.	Introduction and overview	O. Kester	
28.10.	Ionisation – Electron impact ionisation + photo ionisation	S. Geyer	
04.11.	Plasmaphysics for ion sources	O. Kester	No. 1
11.11.	Magnetic confinement of plasma	O. Kester	No. 2
18.11.	rf-driven ion sources and the Electron Cyclotron Resonance Ion Sources (ECRIS)	O. Kester	No. 3
25.11.	High current ion sources	O. Kester	No. 4
02.12.	High current beam diagnostics	P. Forck	No. 5
09.12.	Surface and laser ion sources	O. Kester	No. 6
16.12.	The Electron Beam Ion Source	O. Kester	No. 7
13.01.	Ion beam extraction of plasma sources and beam formation	O. Kester	No. 8
20.01.	Beam optics and beam transport	P. Forck	No. 9
27.01.	Beam profile measurements and beam diagnostic	P. Forck	No. 10
03.02.	Beam emittance and measurements	P. Forck	Test
10.02.	Application of ion sources	O. Kester	

Possible visit of GSI in the week before Christmas

Skript: <http://acc.physik.uni-frankfurt.de/>

unter dem Punkt „Vorlesungen“.

## Literature

- B. Wolf, *Handbook of ion sources*, CRC Press 1995
- G. Brown, *The physics and technology of ion sources*, 2004, Wiley VCH Verlag GmbH, ISBN 3-527-40410-4
- J. Großer, *Einführung in die Teilchenoptik*, Teubner 1983 (vergriffen)
- S. Molokovski, A.D. Suschkov, *Intensive Elektronen- und Ionenstrahlen*, Vieweg
- M. Reiser, *Theory and design of charges particle beams*, John Wiley & Sons 1994
- Septier, *Focussing of charged particles*, part A-C, Academic Press 1980
- CERN Accelerator School, CERN 94-01 Vol.I&II
- H. Zohm, *Plasmaphysik*, Vorlesungsskript, LMU München, Wintersemester 2001/2002
- L. Spitzer, *Physics of fully ionized gases*, second edition, John Wiley & Sons 1967
- Review of Scientific Instruments Vol.67, No.3, AIP 1996
- Review of Scientific Instruments Vol. 71, No.2, AIP 2000
- Review of Scientific Instruments Vol. 73, No.2, AIP 2002
- Fred J. Currell, *The Physics of Multiply and Highly Charged Ions Volume 1: Sources, Applications and Fundamental Processes* , 2004, Klywer Academic Publication, ISBN 1-4020-1565-8