

## Foreword

The year 2013 has been exceptional - in two extreme ways.

On one hand, we witnessed important progress in the technological developments for the accelerator and detector components for FAIR, the Facility for Antiproton and Ion Research, the future project of GSI and the international science community in the fields of hadron and nuclear sciences as well as for many applications in atomic and biophysics and material research. Several Technical Design reports have been concluded in 2013 (i.e. CBM Silicon Tracking Stations). From the Manne-Siegbahn-Laboratory in Stockholm the CRYRING storage ring has been delivered to the future FAIR accelerator facility. This storage ring will be assembled first at the existing GSI facility to conduct experiments and machine tests. Elaborate alterations of GSI's large ring accelerator SIS18 have been concluded end of 2013 after one year of work which included in particular the installation of a new accelerator cavity.

On the other hand, the necessary focussing of GSI on the FAIR project came with a price: no beam time at GSI and financial support in the research department at the bare minimum. Despite these less than optimal conditions, my colleagues in the research department have reached many scientific firsts, based on experiments performed in earlier years or outside of GSI and very often supported by collaborations with the Helmholtz Institutes in Jena and Mainz or within the HIC4FAIR excellence initiative and the Helmholtz Alliance 'Cosmic Matter in the Laboratory'. This report summarizes the achieved scientific highlights and the path taken by the research department towards FAIR.

I am grateful to my colleagues for not having lost the motivation accepting the severe cuts in the ongoing research activities and maintaining their drive for our joint goal in 2020: to open up an unprecedented science program at the international FAIR facility in Darmstadt.

Karlheinz Langanke

