

Helmholtz Alliance "Cosmic Matter in the Laboratory"

ExtreMe Matter Institute EMMI



www.gsi.de/emmi

Helmholtz Alliance

"Cosmic Matter in the Laboratory" / ExtreMe Matter Institute EMMI

Status: approved Nov. 2007
From HGF: 18.75 MEuro for 6 years
Matching funds from Partners: 54.026 MEuro
Start of Program: April 1, 2008

Infrastructure: new EMMI building with office space, lecture hall
and seminar rooms under construction at GSI
completion expected 12/2010

Organisation

Management:

Scientific Director: Prof. Dr. Peter Braun-Munzinger

Administrative Director: Dr. Heidrun Bojahr

Scientific Coordinator: Prof. Dr. Carlo Ewerz

+ administrative assistants and IT support

13 Partner Institutions

27 further experts as **Associated Partners**

Scientific Council (representatives of Partners) as main steering body

Program Advisory Committee (consisting of 8 external experts)

Partner Institutions

- coordinating Helmholtz Centre:
GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt
- Forschungszentrum Jülich, Germany
- Technische Universität Darmstadt, Germany
- Johann Wolfgang Goethe-Universität Frankfurt, Germany
- Ruprecht-Karls-Universität Heidelberg, Germany
- Universität Münster, Germany
- Max-Planck-Institut für Kernphysik (MPIK), Heidelberg, Germany
- FIAS Frankfurt Institute for Advanced Studies, Germany
- Université VI (Pierre et Marie Curie), Paris, France
- Lawrence Berkeley National Laboratory, Berkeley, USA
- Joint Institute for Nuclear Astrophysics (JINA), USA
- University of Tokyo, Japan
- RIKEN, Saitama, Japan

Goals of the Alliance

Central goal:

establish the "ExtreMe Matter Institute" *EMMI* as a

Think Tank for extreme matter research

aiming at:

- interdisciplinary scientific programs of highest quality
- strong promotion of young researchers
- new network among two Helmholtz centers and eleven top national and international laboratories and universities

complementary to HICforFAIR

Emergence of Common Structures and Concepts

4 main areas of research:

- quark gluon plasma
- neutron matter
- plasma physics
- atomic physics and ultracold quantum gases

emergence of common structures and common underlying theoretical concepts in these strongly coupled systems:

- from BEC to BCS
- from QGP to ultracold Fermi gases
- from conformal field theories to QCD via black holes
- from neutron star matter to strongly coupled electromagnetic plasmas

vision: bringing together the best minds from these communities

Opportunity to attract top international talents

- 18 new permanent/tenure track positions pledged by the Partners
- more than 100 senior researchers participating in the Alliance, more than 300 scientists in total
- 3 positions filled to-date (TUD, MPI-K, MS), advanced recruiting for senior positions (HD, F, ...)
- 4 EMMI fellow positions at GSI, 2 positions filled to-date
- visitor program
- EMMI supported PhD students associated with surrounding graduate schools (H-QM, HGS-HIRe, HGSFP)

ExtreMe Matter Institute EMMI

EMMI Workshops and EMMI Programs

Call for Proposals

The ExtreMe Matter Institute EMMI at GSI invites proposals for workshops and research programs in the four main research areas of EMMI:

- quark-gluon plasma
- neutron matter
- electromagnetic plasmas of high energy density
- ultra-cold quantum gases and extreme states in atomic physics,

all understood in a broad sense.

Further information at www.gsi.de/emmi

