

CHEMISTRY

THE MAX PLANCK INSTITUTE FOR CHEMICAL PHYSICS OF SOLIDS

PHYSICS



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A reminder of the Institute and its structure



Approximately 170 scientists and graduate students

Four departments

Three independently-funded research groups

Three Institute Fellows and one External Scientific Member

Technical, building and administrative support from nearly 90 further staff

Total annual budget (including third-party funds) of approximately 25 M€

Chemical Metals Science

Juri Grin

Solid State Chemistry

Claudia Felser

Physics of Correlated Materials

Hao Tjeng

Physics of Quantum Materials

Andy Mackenzie

Nanostructured Quantum Materials

Johannes Gooth

Spin3D

Claire Donnelly

Physics of Unconventional Metals & Superconductors

Elena Hassinger

External Scientific Member and Fellows

Zachary Fisk, Laurens Molenkamp, Séamus Davis, Michael Ruck

Vision



The **core scientific goal** of our Institute is to work at the **forefront of modern solid state chemistry and physics**, and in particular to profit from **strong interactions** between departments to advance the interface of the two fields.

By maintaining an open, collaborative atmosphere with minimal inter- group barriers, we profit from **interdisciplinary expertise** at a number of levels.

Physicists and chemists are also encouraged to work together on creation of **new materials** and the refinement of existing materials to world-leading levels of **purity** at which entirely **new collective phenomena** can emerge.

In spite of Covid ...



- We have managed to avoid any period of complete closure
- The infection rate among our staff is 2% compared to a state average of 8% and we have had only one possible case of in-house transmission
- All our key performance statistics (papers, citations, prizes, faculty appointments for staff) are improved since our last reporting period ending 2018
- We have attracted a number of excellent new young staff
- We successfully renewed our International Max Planck Research School and played an active role in the development of the Max Planck Graduate Center for Quantum Materials
- We have played an active role in helping TU Dresden win major collaborative research grants and Excellent University status
- Within the Max Planck Society our Strategic Plan for the next twenty years of our development was warmly endorsed by the key Perspectives Committee

For this I express my huge gratitude to my colleagues and all our staff

Covid planning



Marcus Schmidt
Health and safety

Juri Grin
Deputy Managing Director

Petra Nowak
Administrative services

Jens Gerlach
IT Services

Andreas Schwoboda
Building services

Claudia Strohbach
Katrin Demian
Amy Wright
Visitors Office

Burkhard Schmidt
Markus König
Graduate student
welfare

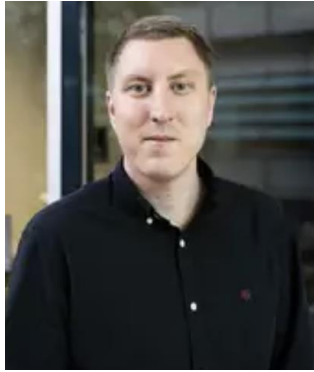
Gudrun Auffermann
Renate Hempel-Weber
Gender Equality

Jörg Faltin
Main workshop

Student and staff/student surveys
in June and November 2020
63 bilingual pan-institute Covid
information e-mails

Oliver Stockert
Home office issues

Staff who won competitively awarded Max Planck Society positions



**Johannes
Gooth**
MPRG 2018



**Eteri
Svanidze**
Minerva Fast
Track 2019



**Veronika
Sunko**
Minerva Fast
Track 2020



**Claire
Donnelly**
Lise Meitner
Group 2021



**Uri
Vool**
MPRG 2022

Staff who moved on to external faculty positions



Tenure-track positions

Chenguang Fu (Zhejiang U.)
Jacob Gayles (U. South Florida)
Nitesh Kumar (Bose Institute Kolkata)
Guowei Li (Ningbo Institute of Materials
Technology & Engineering,
Chinese Academy of Sciences)
Kaustav Manna (IIT Delhi)
Kim Modic (IST Austria)
Jayita Nayak (IIT Khanpur)
Joyce Pham (Cal. State U. San
Bernardino)
Jhuma Sannigrahi (IIT Goa)

Senior tenured positions

Ricardo D. dos Reis (Brazilian
Synchrotron Light Laboratory)
Roman Gomeniuk (TU Bergakademie
Freiberg)
Philip Hansmann (U. Erlangen)
Clifford Hicks (U. Birmingham)
Enke Liu (Chinese Academy of
Sciences Institute of Physics, Beijing)
Philip Moll (EPFL then Directorship at
Max Planck Institute for Structural
Dynamics)
Takashi Oka (U Tokyo)
Jakub Železny (Institute of Physics,
Czech Academy of Sciences)

Congratulations to



Frank Steglich

Fritz London
Memorial Prize 2020



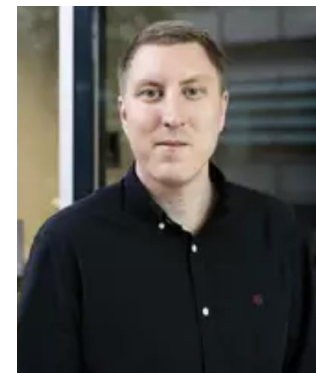
Juri Grin

V.I. Vernadskyj
Gold Medal of the
National Academy of
Sciences of
Ukraine 2020



Claudia Felser

APS McGroddy Prize for
New Materials 2019
For. Mem. US NAS 2021
For. Mem. US NAE 2021



Johannes Gooth

Rudolf Kaiser Prize 2020



Most important contribution during pandemic: financial support. Pre-payment of scholarships to the stranded and contract extensions for current young staff and students

Graduate student level

International Max Planck Research School for Chemistry and Physics of Quantum Materials renewed for a second term (until end 2027)

Active role in the new Max Planck Graduate Center in Quantum Materials

Burkhard Schmidt as PhD Officer and Markus König as IMPRS co-ordinator

Post-doc level

Transferable skills and career planning training: > 40 courses per annum on offer

Pro-active and engaged post-doc representatives: excellent work in community-building and information sharing



- Improved understanding and dialogue with TU Dresden Rektorat and positioning within the Dresden Concept
- 38 joint studentships with colleagues in TU Dresden within the IMPRS and other joint initiatives
- 11 shared grants and funded initiatives including the Dresden-Würzburg Excellence Cluster ct.qmat (see also collaboration with Institute Fellow Laurens Molenkamp), phase I and phase II of SFB 1143, and SPP 1708, SPP 1959 and SPP 2137
- Resolution of building and planning issues that were of much concern in 2018 – many thanks to the legal team at the MPG Central Administration

Examples of formal international collaboration



Max Planck Center for
Quantum Materials
(UBC, Canada & U Tokyo,
Japan)

IMPRS for Chemistry and
Physics of Quantum Materials
(U. St Andrews, UK)

Max Planck Center for
Complex Phase Materials
(POSTECH, Korea & NSRRCC-
NCTU-NHTU, Taiwan)

Zach Fisk (UC Irvine, USA)

Max Planck Institute for Chemical
Physics of Solids

Seamus Davis (U Oxford, UK &
UC Cork, Ireland)

Max Planck Partner Group
Brazilian Synchrotron
Radiation Laboratory

Czech Academy of Sciences
(Prague, Czech Republic)

Weizmann Institute of Science
(Rehovot, Israel)

Max Planck Partner Group
University of La Plata,
Argentina

University of Lviv, Ukraine

Shanghai Institute of
Ceramics (Shanghai, China)



Core issue in this area is gender balance

1 female director from 4

2 female independent W2 group leaders director from 3

1 female departmental W2 from 3

11 female departmental group leaders from 40

9 female post-docs from 48

25 female graduate students from 45



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Thanks to Gudrun Auffermann and Renate Hempel-Weber for their work as our Gender Equality Officers

Challenges going forward



Finding a leading synthetic chemist to follow on from Juri Grin

Search already in progress in collaboration with Max Planck Society Scouting Officer Dr Marion Cerri. Input from Advisory Board very welcome!

Digitalisation and efficiency gains

Future initiative across the Max Planck Society but also room for improvement locally

Gender balance

Improvements made over past assessment period but always room for more!

Administrative overload

Rapid increase in regulatory demands & transfer of responsibility to Institutes

International recruitment

International tensions inhibit free scientific exchange