



Annual Meeting of ASPIMATT JST-DFG Research Unit

August 22-23, 2011

Villa Denis, Diemerstein/Kaiserslautern

Program:

Monday, August 22, 2011

- 08:30h *Pickup at Novotel hotel and transfer to Villa Denis*
- 09:00 – 09:20 Opening and overview on activities (Felser, Takanashi)
- 09:20 – 10:35 Reports on Task 1: New materials for spin filter effect and perpendicular transport (each: 20 minutes plus 5 minutes for discussion)
Chair: B. Hillebrands
- 1.1-A New materials research for high spin polarization (Naganuma, Tezuka)
- 1.2-A Theory of the electronic and magnetic structure of advanced spintronic materials with emphasis on spectroscopy and properties (Chadov, Fecher)
- 1.3-A Investigation of the electronic structure of buried layers and interfaces using high energy photoemission (Balke, Fecher, Felser)
- 10:35 – 11:00 *Coffee and tea break*
- 11:00 – 11:50 Continuation of reports on Task 1
- 1.4-B Theoretical studies on spin-dependent transport phenomena in heterostructures based on half-metallic Heusler alloys (Shirai)
- 1.5-B Direct measurement of spin-injection efficiency and dynamics in model systems for advanced Heusler-based spintronics devices (Cinchetti, Aeschlimann)
- 11:50 – 13:00 *Lunch break*
- 13:00 – 14:15 Reports on Task 2: Heusler alloys with large perpendicular anisotropy (each: 20 minutes plus 5 minutes for discussion)
Chair: C. Felser
- 2.1-A Fabrication and characterization of half-metallic Heusler alloy films with large perpendicular magnetic anisotropy (Mizukami, Miyazaki)
- 2.2-A Half-metallic Heusler alloys combined with L10 ordered alloy films (Sakuraba, Takanashi)

2.3-A New compounds with large perpendicular magnetic anisotropy and for spin-torque application (Felser)

14:15 – 14:30 *Break*

14:30 – 15:30 Student session - Short presentation -
(each: only 3 minutes presentation)

15:30 – 17:30 Poster session

Evening: Network Dinner at Townhall Restaurant “21”

Tuesday, August 23, 2011

08:30h *Pickup at Novotel hotel and transfer to Villa Denis*

09:00 – 10:40 Reports on Task 3: Gilbert damping
(each: 20 minutes plus 5 minutes for discussion)

Chair: K. Takanashi

3.1-A Gilbert damping in half metal Heusler alloy films (Oogane, Mizukami)

3.3-A Theoretical study of Gilbert damping in half metal Heusler alloy films (Sakuma, Tsuchiura)

Reports on Task 4: Lateral spin transport and spin waves including devices
(each: 20 minutes plus 5 minutes for discussion)

4.1-B Novel devices based on Heusler films with GMR and MTJ nanocontacts (Ando, Naganuma, Oogane)

4.3-B Lateral spin transport in semiconductors (Matsukura, Kohda, Nitta)

10:40 – 11:10 *Coffee and tea break*

11:10 – 12:25 Continuation of reports on Task 4

4.5-A Heusler materials for new spin transport applications (Jakob, Felser)

4.6-B Lateral spin transport in Heusler alloy systems (Takanashi, Sakuraba)

4.7-B Nonlinear spin-wave dynamics and radiation properties of small Heusler devices (Serga, Hillebrands)

12:25 *Lunch break*

14:00 – 15:00 Discussion and planning for next year

15:00 *Lab tour TU Kaiserslautern, Aeschlimann and Hillebrands groups*

Evening: free for exploring Kaiserslautern



ASPIMATT School on

“Advanced Spintronic Materials and Transport Phenomena”

August 24-27, 2011

Villa Denis, Diemerstein/Kaiserslautern

(following the ASPIMATT network meeting August 22-23, 2011)

Program:

During the school there will be a permanent poster session.

Each lecture is 45 minutes. After each lecture there are 15 minutes for discussions.

Wednesday, August 24, 2011

08:30h *Pickup at Novotel hotel and transfer to Villa Denis*

Morning: Lectures WED1 – WED3 Fundamentals (*Chair: B. Hillebrands*)

09:00h – 09:45h T. Miyazaki: Intuitive understanding of magnetism I (Phenomenology)

10:00h – 10:45h K. Takanashi: Introduction into spin-current phenomena

11:00h – 11:30h *Tee and coffee break*

11:30h – 12:15h T. Miyazaki: Intuitive understanding of magnetism II (Phenomenology)

Group photo

12:30h – 14:00h *Lunch break*

Afternoon: Lectures WED4 – WED7 Heusler materials (*Chair: K. Takanashi*)

14:00h – 14:45h J. Kübler: Theory of magnetism in Heusler compounds I

15:00h – 15:45h C. Felser: Basics of Heusler compounds

16:00h – 16:30h *Tee and coffee break*

16:30h – 17:15h J. Kübler: Theory of magnetism in Heusler compounds II

17:30h – 18:15h C. Felser: Advanced Heusler materials

18:30h *Transfer to hotel*

Evening: free for exploring Kaiserslautern

Thursday, August 25, 2011

08:30h *Pickup at Novotel hotel and transfer to Villa Denis*

Morning: Lectures THU1 – THU3 Special experimental techniques I (Chair: T.Miyazaki)

09:00h – 09:45h K. Takanashi: Advanced spin-current phenomena

10:00h – 10:45h G. Fecher: Research using photoemission spectroscopy

11:00h – 11:30h *Tee and coffee break*

11:30h – 12:15h B. Hillebrands: Fundamentals of spin dynamics and Brillouin light scattering

12:30h – 14:00h *Lunch break*

14:00 *Afternoon: sightseeing – draisine tour*

Transfer to hotel

Friday, August 26, 2011

08:30h *Pickup at Novotel hotel and transfer to Villa Denis*

Morning: Lectures FRI1 – FRI3 Special experimental techniques II (Chair: C. Felser)

09:00h – 09:45h M. Aeschlimann: femtosecond spectroscopy

10:00h – 10:45h S. Wurmehl: Introduction into NMR and Mößbauer spectroscopy

11:00h – 11:30h *Tee and coffee break*

11:30h – 12:15h S. Mathias: T-MOKE using fs XUV pulses

12:30h – 14:00h *Lunch break*

Afternoon: Lectures FRI4 – FRI7 Spin dynamics (Chair: M. Shirai)

14:00h – 14:45h S. Mizukami: Fundamentals of Gilbert damping

15:00h – 15:45h B. Hillebrands: Magnon-spintronics

16:00h – 16:30h *Tee and coffee break*

16:30h – 17:15h S. Mizukami: Gilbert damping by FMR, TR-MOKE

17:30h – 18:45h S. Wurmehl: NMR and Mößbauer spectroscopy – powerful tools to investigate Heusler compounds

Evening: ASPIMATT School Dinner

Transfer to hotel

Saturday, August 27, 2011

08:30h *Pickup at Novotel hotel and transfer to Villa Denis*

Morning: Lectures SAT1 – SAT3 Spin transport phenomena (*Chair: S. Wurmehl*)

09:00h – 09:45h F. Matsukura: Fundamentals of spin transport in semiconductors

10:00h – 10:45h F. Matsukura: Spin transport in semiconductors

11:00h – 11:30h *Tee and coffee break*

11:30h – 12:15h S.S.P. Parkin: Material aspects in advanced magnetic storage devices

12:30h – 14:00h *Lunch break*

Afternoon: Lectures SAT4 – SAT7 Applications (*Chair: M. Oogane*)

14:00h – 14:45h G. Reiss: Fundamentals of magnetic sensors

15:00h – 15:45h M. Kläui: Interaction of spin-polarized charge carriers and magnetization

16:00h – 16:30h *Tee and coffee break*

16:30h – 17:15h G. Reiss: Advanced magnetic sensors

17:30h – 18:15h E. Saitoh: Spin Seebeck effect

Evening: Fare well party with wine tasting

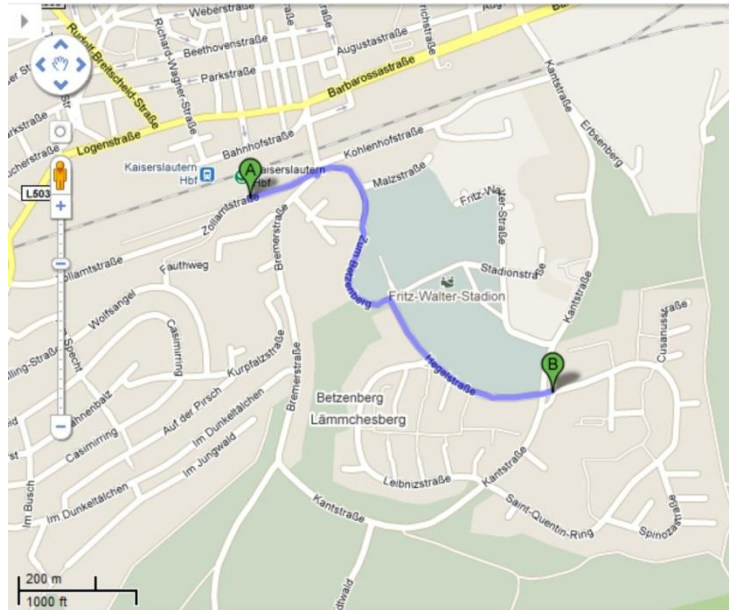
Transfer to hotel

Sunday, August 28, 2011

Departure

Hotel:

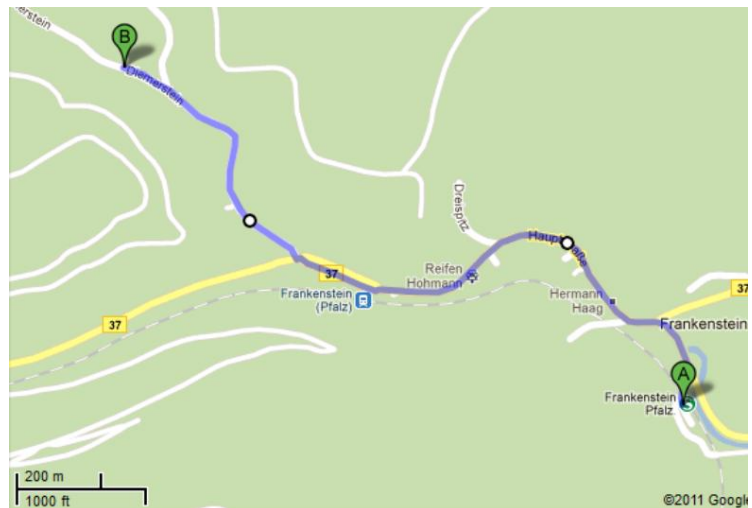
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A: Main station (take backside exit “Zollamtstrasse”),
B: Novotel Kaiserslautern

Villa Denis:

Stiftungshaus der TU Kaiserslautern
Burg Diemerstein
Diemerstein 9
67468 Frankenstein



A: Main station Frankenstein,
B: Villa Denis

Bus Service:

Bus service will be provided each morning at 8:30h from the hotel to the Villa Denis and in the evening from the Villa Denis to the hotel.

Public Transport:

Via local train (S-Bahn) there is connection to Villa Denis every 30 minutes, starting from Kaiserslautern main station 32 minutes and 58 minutes after each full hour, and from train station Frankenstein 17 minutes and 48 minutes after each full hour. Please, see the maps to find your way to/from the hotel and the Villa Denis to/from the corresponding train stations (each approximately 15 minutes walking distance).

If you have further questions regarding our workshop, please do not hesitate to contact Thomas Sebastian (tomseb@physik.uni-kl.de).