



Universität Stuttgart
1. Physikalisches Institut

Functional Materials

From fundamentals
to applications

Hauptseminar
(April – July)



Universität Stuttgart
1. Physikalisches Institut

Organizational meeting:

Date: 07.02/Thursday

Time: starting at 14:00

Place: Pfaffenwaldring 57, third floor, seminar room (3.531)

Planned first talk:

11.04.2019

Correspondance:

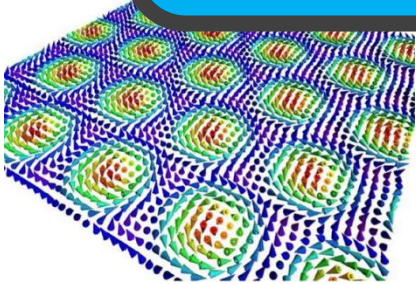
- ✓ Prof. Dr. Martin Dressel
- ✓ Dr. Artem Pronin
- ✓ Dr. Ece Uykur
- ✓ Dr. Yohei Saito

Information

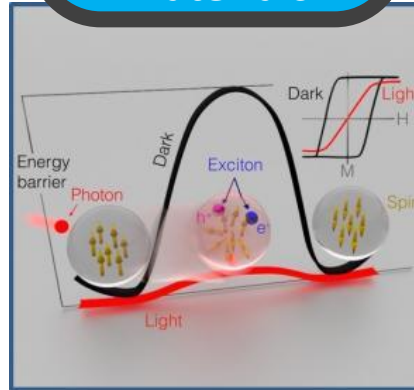
Functional materials:
from fundamentals
to applications



Spintronics



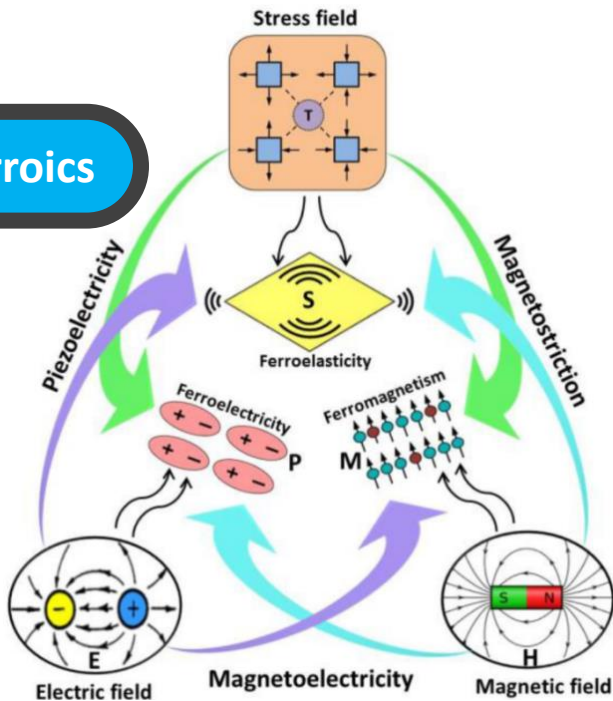
Optical materials



Functional materials

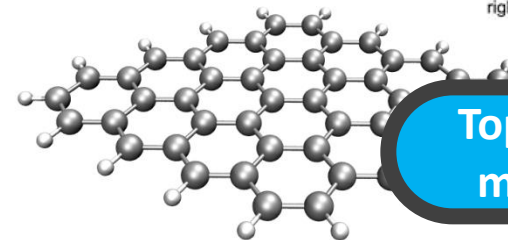
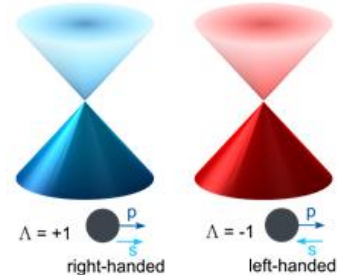
from
fundamentals
to applications

Multiferroics



Interfaces

Weyl semimetal



Topological materials



Topics

Functional materials:
from fundamentals
to applications

1. **Spintronics**
 - a. **Giant magnetoresistance (GMR)**
 - b. **Colossal magnetoresistance (CMR)**
 - c. **Skyrmions**
2. **Topological materials**
 - a. **Graphene**
 - b. **Weyl semimetals**
3. **Multiferroics**
 - a. **Ferroic polarizations**
 - b. **Magnetic nanoparticles**
4. **Optical functional materials**
 - a. **Photo-induced phase transitions in strongly correlated electron systems**
 - b. **Linear and Nonlinear optics**
5. **2 - Dimensional electron gas**
 - a. **in MOSFETs**
 - b. **at LaAlO₃/SrTiO₃ interfaces**

1 talk per week
April - July