

## Topics

- I. Theory of Superconductivity Mechanism (S.1)
- Coulombic mechanism (S.1.a)
  - Phononic mechanism (S.1.b)
  - Magnetic mechanism (S.1.c)
- Modeling and Computational Superconductivity (S.2)
- t-j model (S.2.a)
  - Hubbard model (S.2.b)
  - Charge separation (S.2.c)
  - Modeling of magnetic properties (S.2.d)
  - Modeling of other physical properties (S.2.e)
  - Others (S.2.f)
- New superconductors (S.3)
- Ruthenates (S.3.a)
  - Pr-compounds (S.3.b)
  - MgB<sub>2</sub> – Compounds (S.3.c)
  - Other non-cuprate compounds (S.3.d)
- Physical properties (S.4)
- Electronic structures (S.4.a)
  - Electric and magnetic properties (S.3.b)
  - Mechanical properties (S.4.c)
  - Thermal and transport properties (S.4.d)
- Phase Separation (S.5)  
Pseudogap and Gap Symmetry (S.6)  
Effect of Substitution and Impurities (S.7)  
Ladder Cuprates (S.8)  
ARPES and Fermi Surface of HTS (S.9)  
Raman and IR Spectroscopy (S.10)  
Stripe Phase and Charge ordering in HTS(S.11)  
c-Axis Coherence (S.12)  
Vortices and flux dynamics (S.13)  
Applications and devices (S.14)  
Superconductivity and properties of nanoscale materials (S.15)
- II. Giant/Colossal/Tunneling Magneto-Resistance (GMR/CMR/TMR)
- Theory of GMR/CMR/TMR Materials (M.1)\*
  - Measurements and Properties (M.2)
  - Applications and devices (M.3)
- III. Ferroelectric Materials
- Theory of Ferroelectric Materials (F.1\*)
  - Measurements and Properties (F.2)
  - Applications and devices (F.3)

\*: M stands for GMR/CMR/TMR, and F - Ferroelectrics