

Condensed Matter Research Center (CMRC) in Institute of Materials Structure Science (IMSS)

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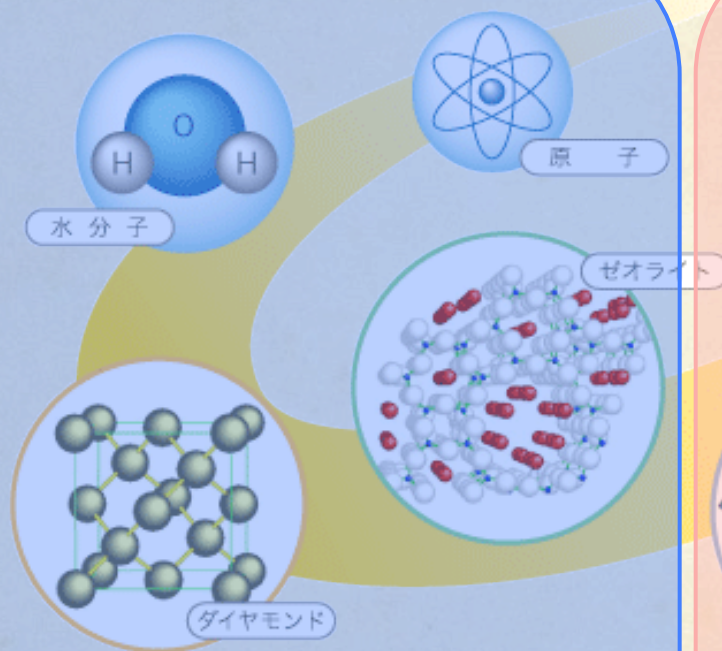
Outline

1. Introduction of the CMRC
2. Science Field Studied in the CMRC
3. Collaboration with Universities and Other Institutes

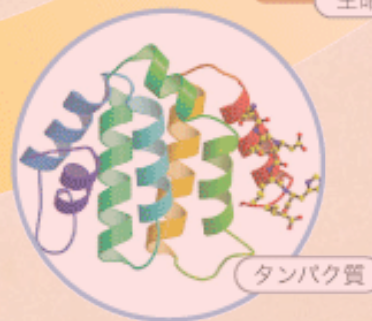
Mission of IMSS

To provide synchrotron light, neutron, and muon to a large number of users in a variety of research fields

To pursue leading-edge researches in many scientific fields



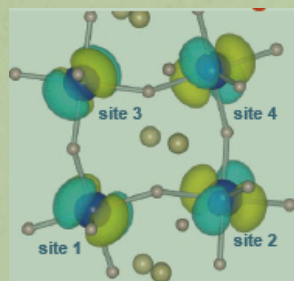
**Condensed Matter
Research Center
(CMRC)**



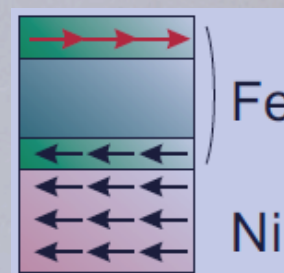
**Structural Biology
Research Center
(SBRC)**

Four Important Research Areas in Condensed Matter Science

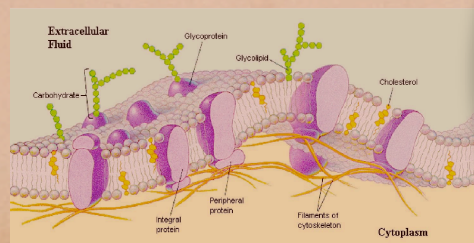
Correlated Electron Matter



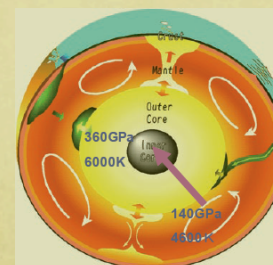
Surface/Interface



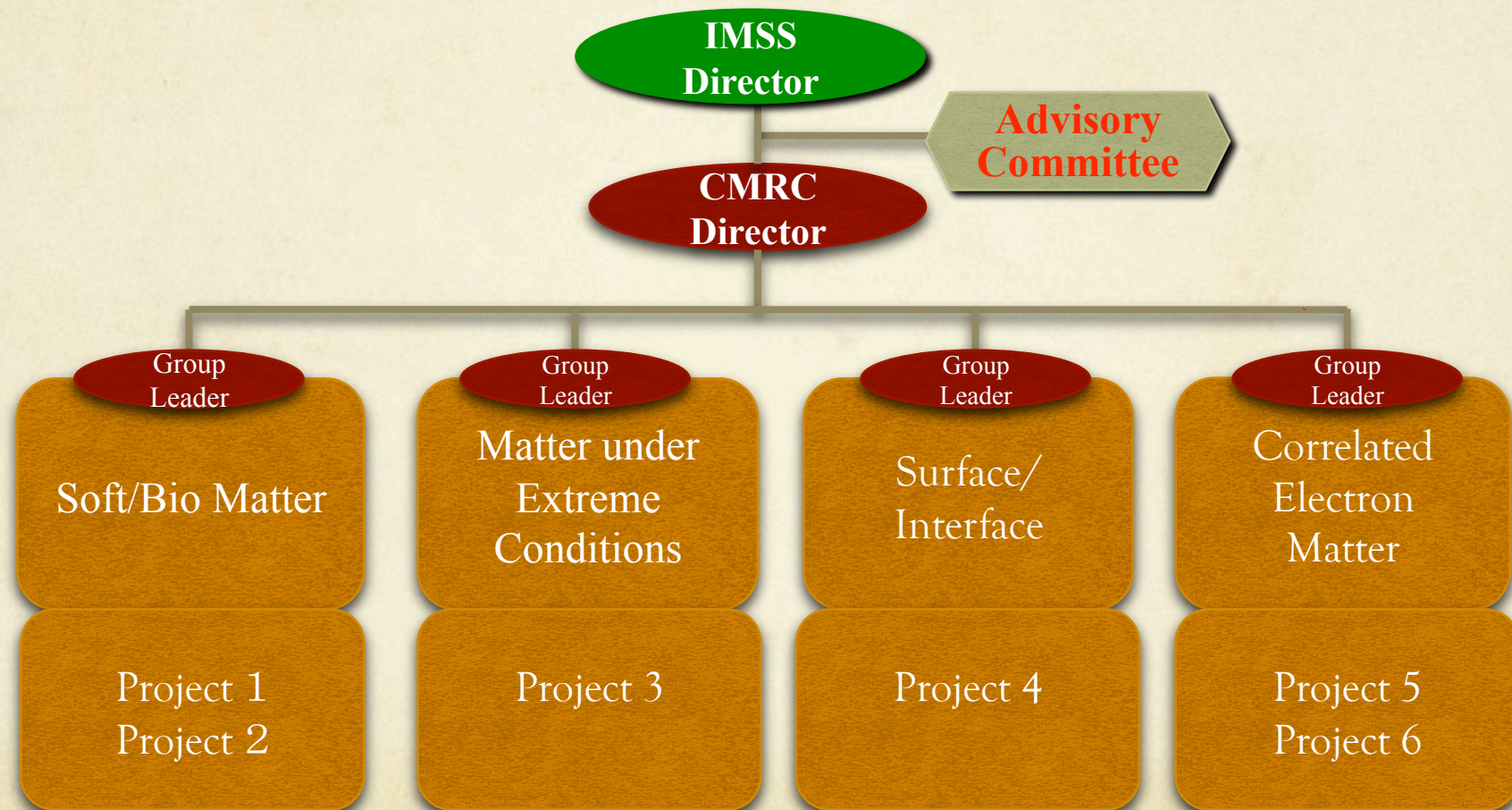
Soft/Bio Matter



Matter under Extreme Conditions



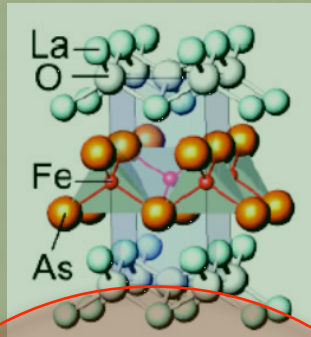
Condensed Matter Research Center Organization Chart



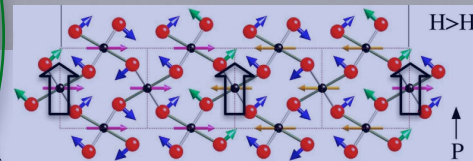
The plans will be minutely investigated and selected by the advisory committee
The available period of the projects is 5-7 years.

Correlated Electron Matter

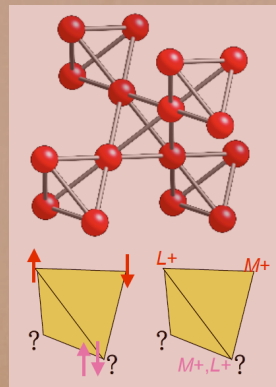
**High T_C
Superconductivity**



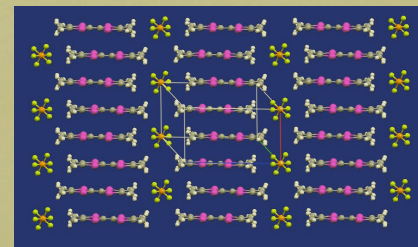
Multiferroics



Frustration

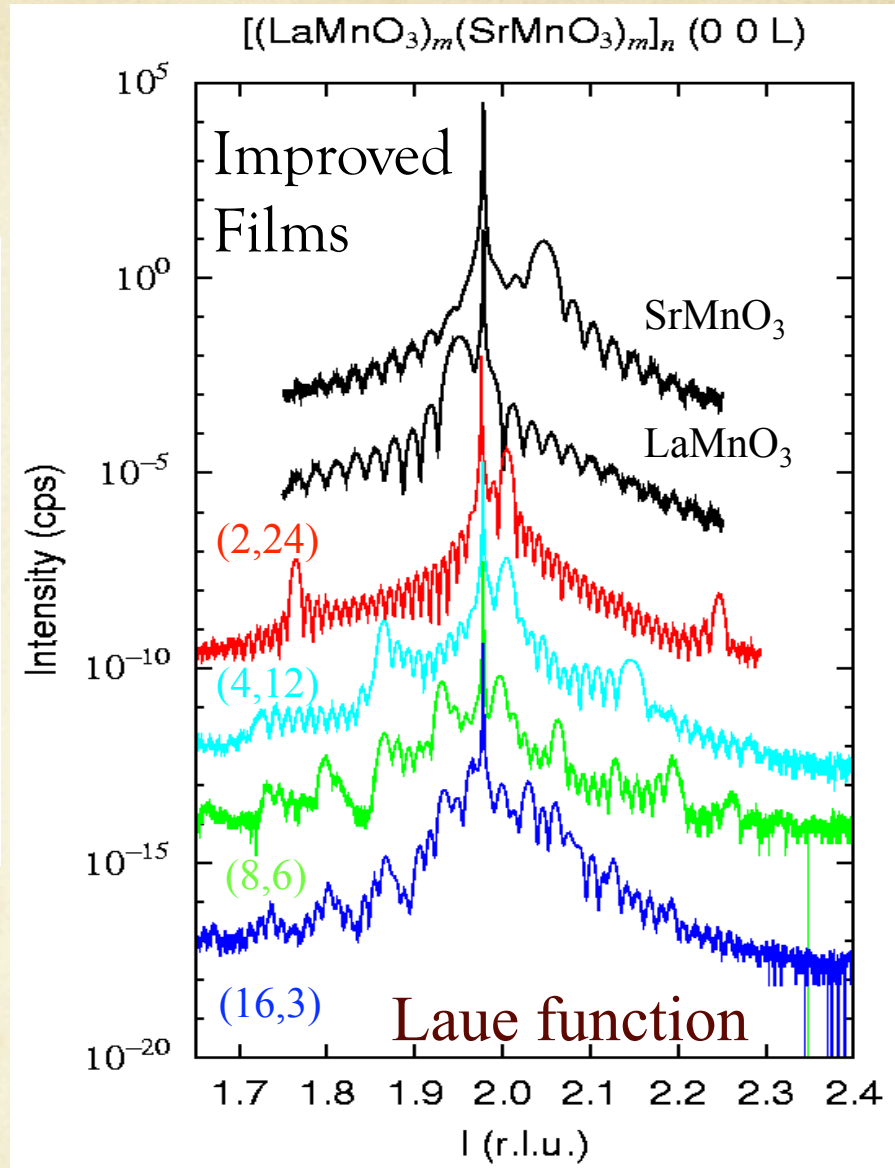
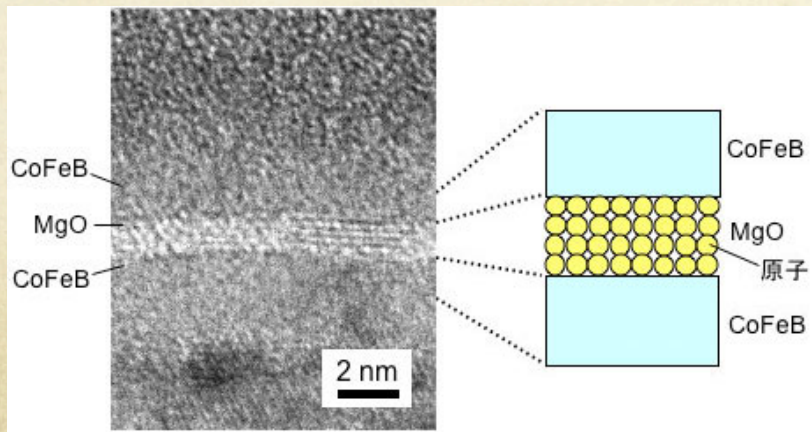
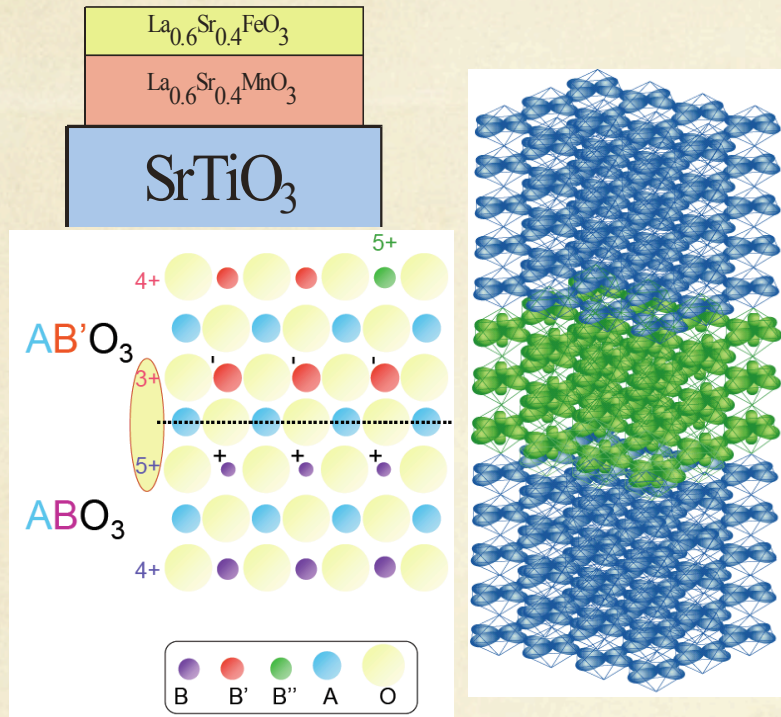


Molecular Conductor



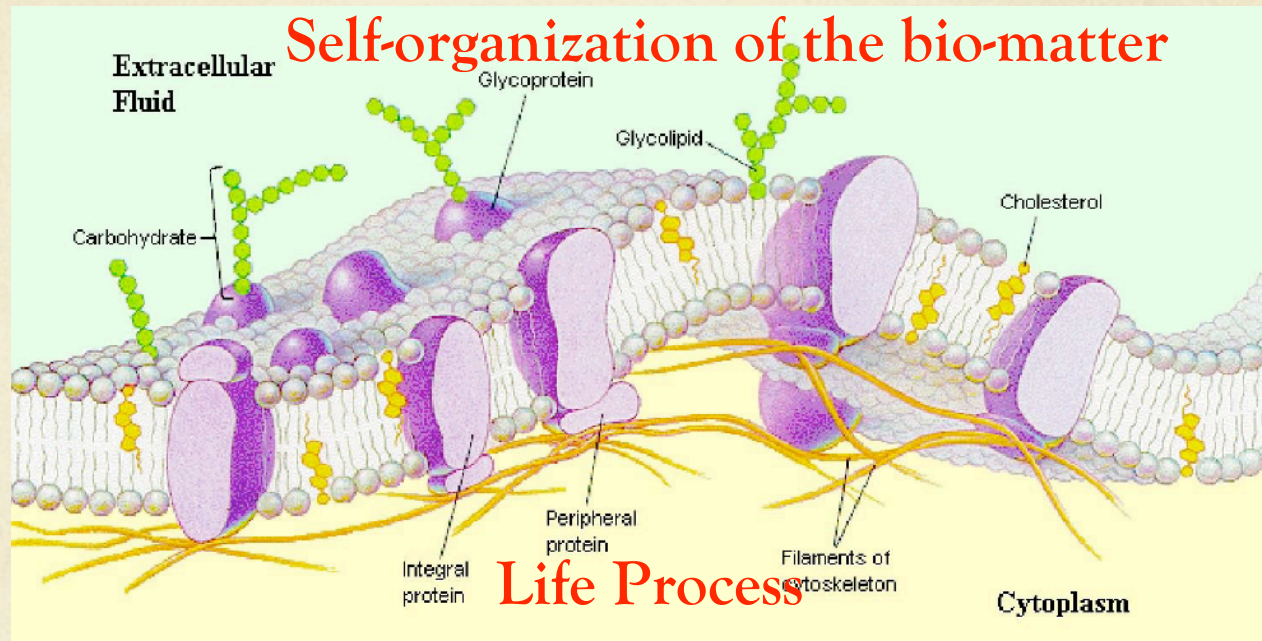
Surface/Interface

Interface State of Oxides

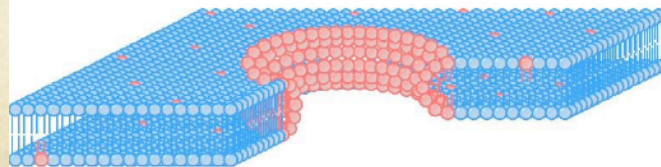


Tunnel Magneto-Resistance
 → Spintronics

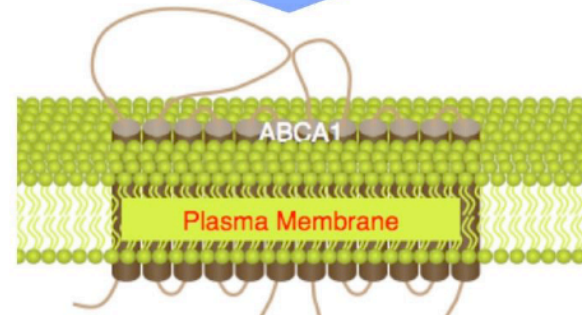
Soft/Bio Matter



Artificial materials to imitate the function



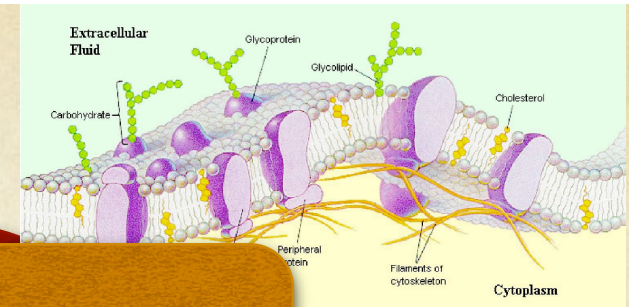
Minimum part of the bio-matter



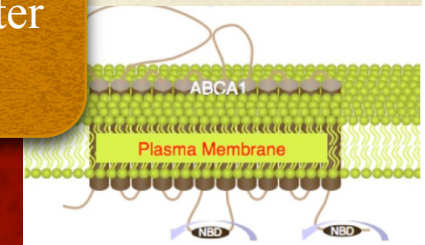
Understanding from the electronic states of the matter.

Scientific Target in the CMRC

Aim for the Sustainable Society



Soft/Bio Matter



Model Materials of Biological System

Matter under Extreme Conditions

Magnetic Field
Electric Field
Pressure

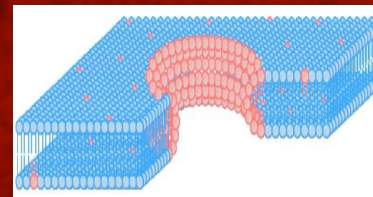
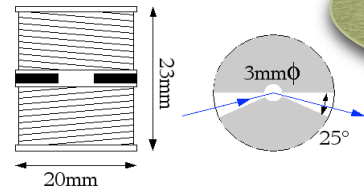
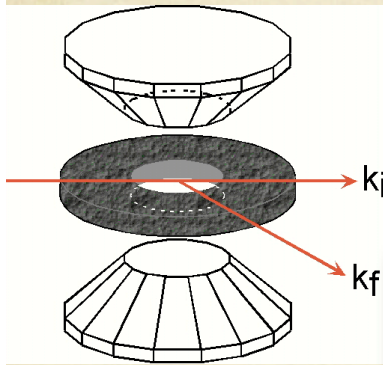
Local Electronic Structure

Molecular Crystal System
 π -d Electron System

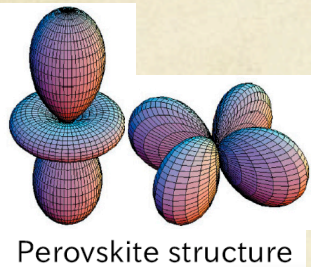
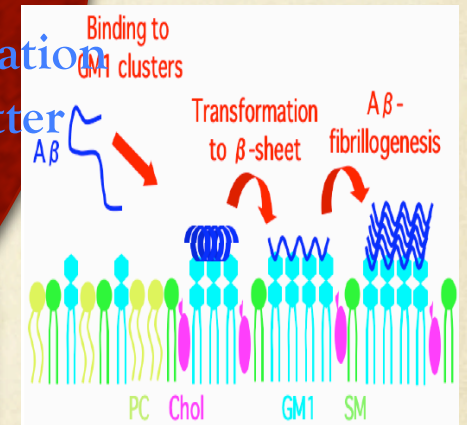
Understanding based on Electronic Structure

Surface/Interface

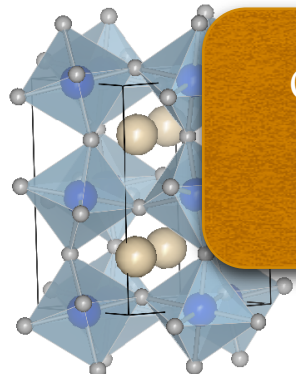
Correlated Electron Matter



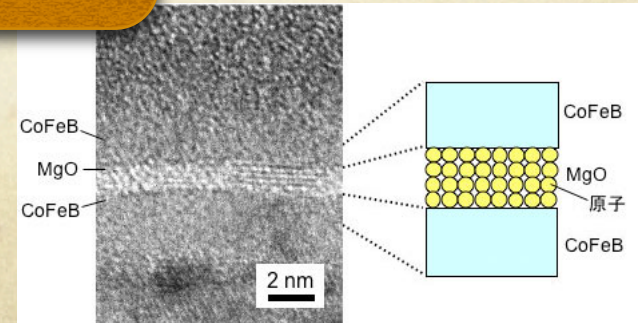
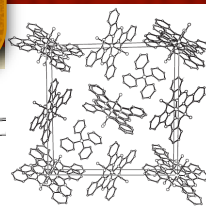
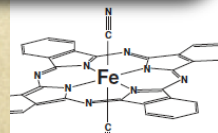
Self-Organization of Soft Matter Membrane



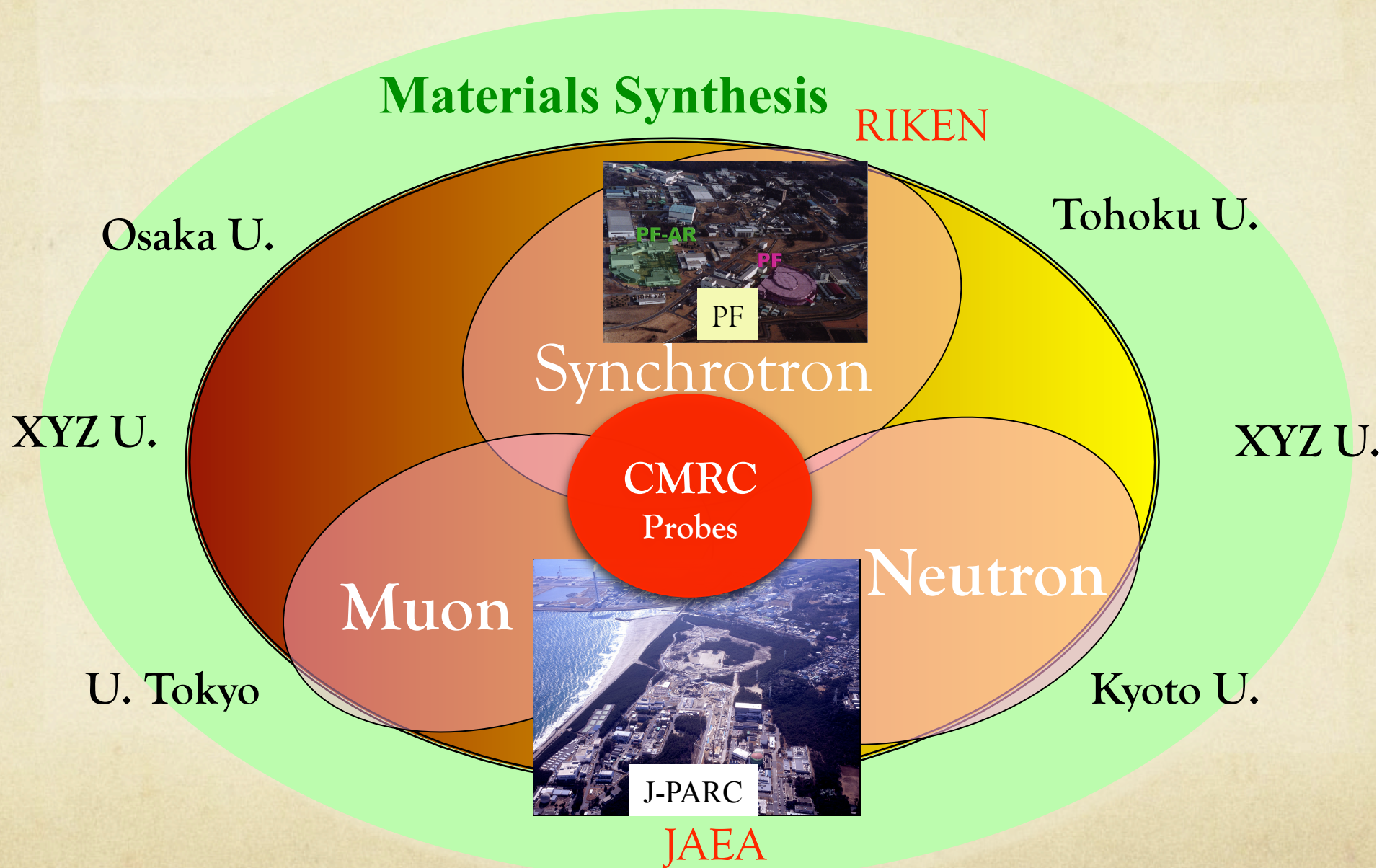
Perovskite structure



Pbnm

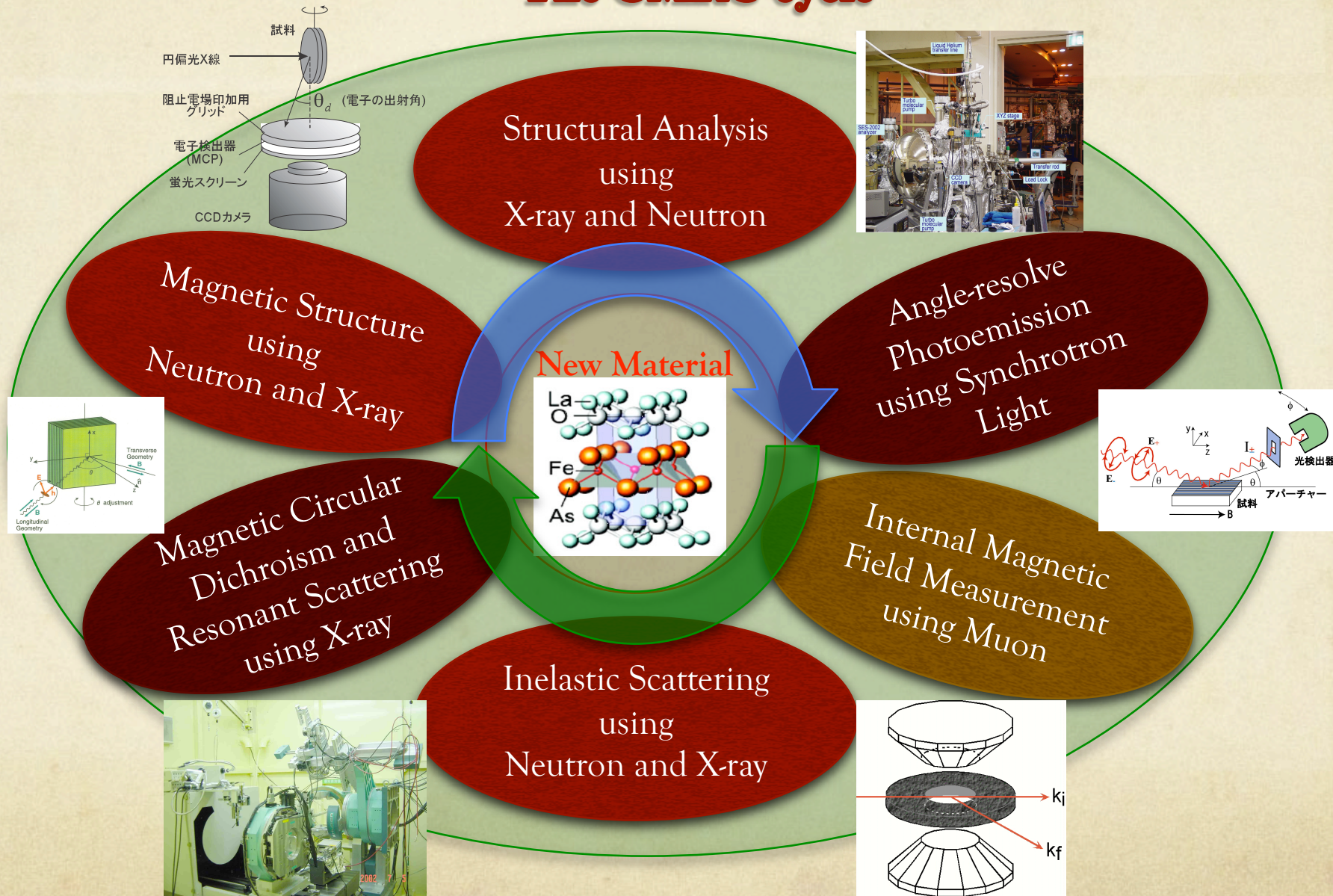


Collaboration with Universities and Other Institutes



Materials Characterization cycle in CMRC

- The CMRC cycle -



Collaboration with RIKEN and JAEA



Synchrotron Radiation Science

Neutron and Muon Science

Personnel Exchanges

International Collaboration with Synchrotron, Neutron, Muon Facilities

