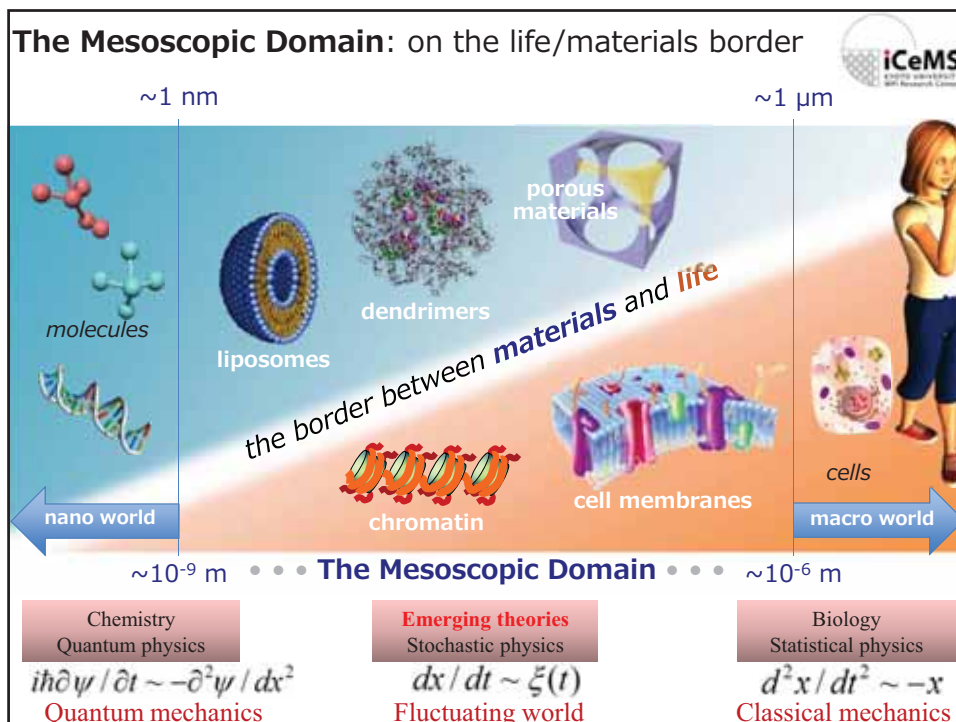
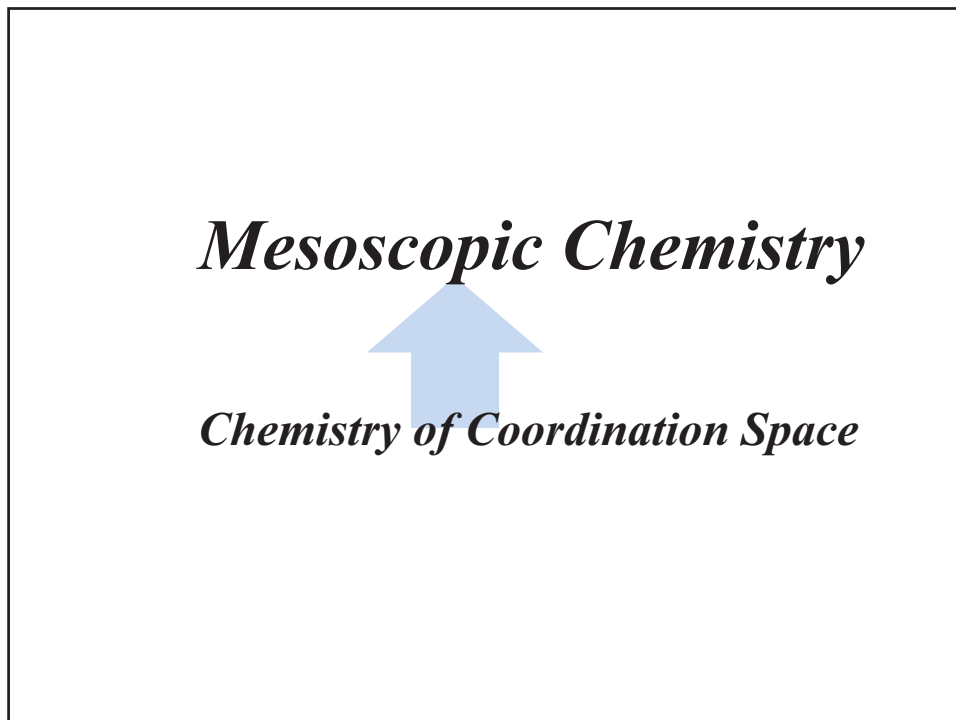




新たなサイエンス

1. メゾスコピックサイエンス
2. 閉じ込め効果の新現象
- 擬圧効果
3. 究極分離細孔



iCeMS' mission: **Meso** gaining more ground 

DOE “going meso”

- Held “meso” sessions & meetings at ACS, APS conferences, raising awareness in scientific media and communities.

“Because the challenges and opportunities at the **mesoscale** are common to many scientific arenas, including **biomedicine and engineering**, a **mesoscale** initiative may eventually spread to other federal funding agencies as well.” — **Science** (2012)¹

“The **mesoscale** is a sufficiently **diverse area** that any programme funding it will ultimately have a broad reach.” — **Nature.com** (2012)

“**Mesoscale** is any physical realm between end-points, such as ... between **biomolecular components and living structures**.” — **APS News** (2012)

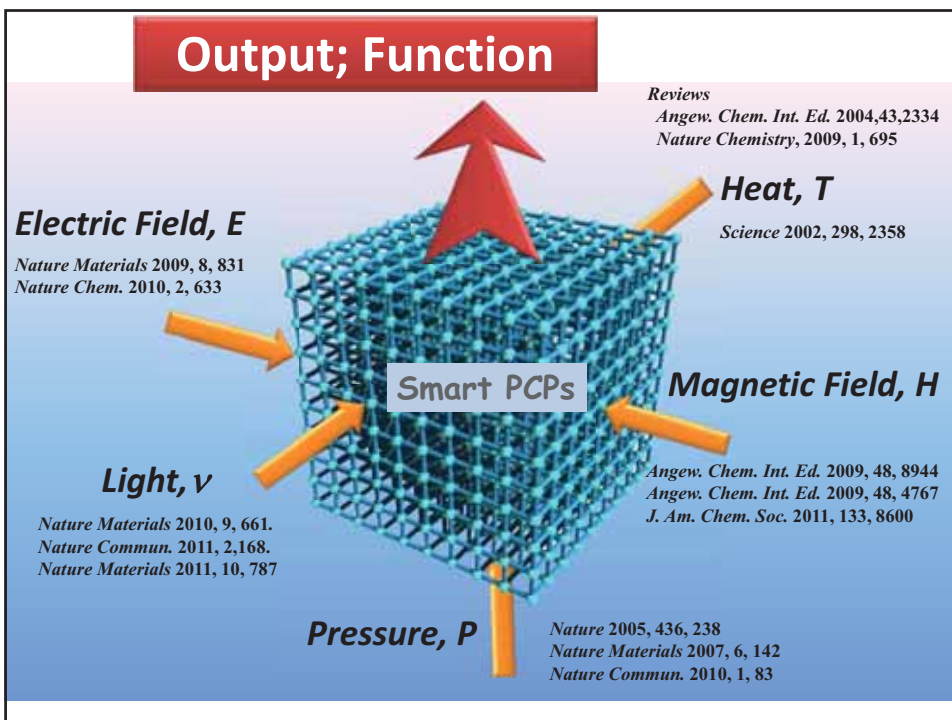
*DoE: US Department of Energy
ACS: American Chemical Society
APS: American Physical Society

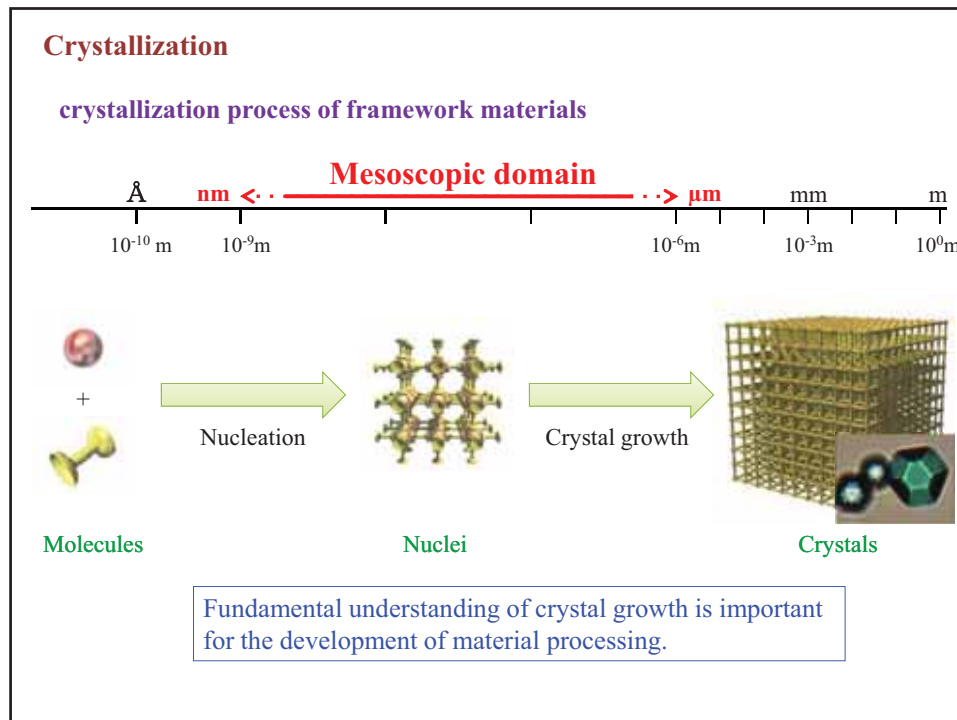


The Next Bigger Thing

Materials, chemistry, and molecular biology are converging to form the next big thing in science by connecting the properties of the molecules...

Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University





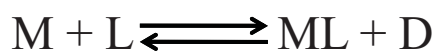
Integrated/Hybrid Pores for Mesoscopic Chemistry

- ❑ *Size Control*
- ❑ *Shape Control*
- ❑ *Surface Control*
- ❑ *Mesoscopic Domain Control*

Coordination chemistry at crystal interfaces

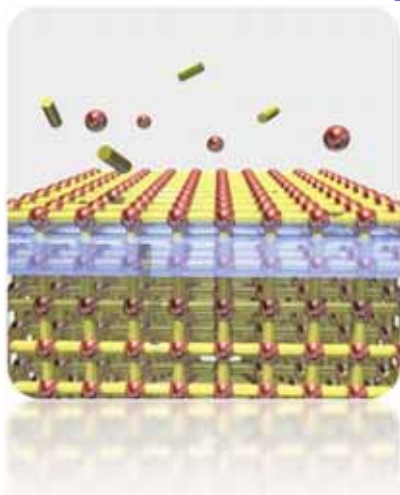
The dynamic nature of crystal interfaces

Coordination equilibrium

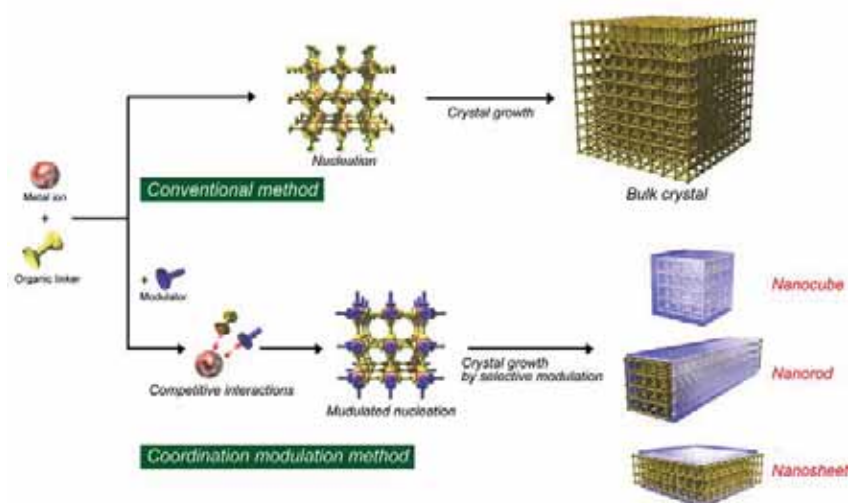


Ligand-exchange reaction

- Reaction control
- Control of crystal size and morphology
- Surface functionalization



Coordination modulation



Angew.Chem.Int.Ed. 2009,48,4739.