Symposium 22:
Layered Double Hydroxides: Science and Design of Binding Field with Charged Layers

Layered double hydroxides (LDHs) are anionic clays, and the general formula for LDHs is $[M^{II}_{1-x}\ M^{III}_{x}(OH)_2][(A^{n-})_{x/n}\cdot mH_2O]$, where M^{II} is a divalent cation, and M^{III} is a trivalent cation, and A^{n-} is an anion. LDHs consist of the positively charged metal hydroxide layers ("Charged Layers") with a field formed by binding chemical species located in the interlayer ("Binding Field"). Over the last decade, the research on LDHs has been developing in several fields and applications, on both fundamental and applied aspects of these materials. However, the communication of the researchers on LDHs with different research fields is insufficient. Collaboration of researchers under the concept of "Science and Design Binding Field with Charged Layers" must lead to significant developments in hydroxide-based materials with layered structure.

This symposium will focus on preparation, characterization, application, and novel properties of LDHs, layered hydroxides, and hydroxide nano-sheets, in any research field. The science and design of "Binding Field with Charged Layers" will be discussed.

<PROPOSED SESSION TOPICS>

·Layered double hydroxides
·Layered hydroxides
·Hydroxide nanosheets
·Advanced structural analysis, novel preparation process, and novel properties of these materials
·Application of these materials to electrochemical devices, magnetic materials, catalysts, optical materials, drug-delivery system, anion exchanger, water purification system, etc.

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<INVITED LECTURES>

Tentative invited lecture information is posted in the following URL;
http://www.ceramic.or.jp/pacrim13/list_of_invited_speakers.html#22