

Palygorskite: From Fundamental Research to Functional Materials

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Palygorskite (or attapulgite) is a naturally available hydrated magnesium aluminum silicate clay mineral. Palygorskite is attracting extensive attention in academia and industry owing to its unique nanorod-like crystals and nano-tunnels ($3.7 \text{ \AA} \times 6.4 \text{ \AA}$). Palygorskite has applications in various fields such as adsorbents for pollutants, drug delivery matrices, decolorizing reagent, catalyst support, polymer reinforcement and functional coatings, etc., because of its large specific surface area, moderate cation exchange capacity, and good adsorption properties and rheological properties. Material scientists, chemists, mineralogists, engineers and physicists are growing their interest toward palygorskite. Meanwhile, the high availability of palygorskite in the world, especially in China and USA, would bring the research outputs into the real world applications in a faster pace.

This session is intended to be a forum for the latest innovative advances on palygorskite, from fundamental research to functional materials. This session is planned to bridge the different competences on palygorskite from scientists with a wide range of specialization.

Highlighted topics:

- Mineralogy and geology of palygorskite
- Modification and characterization of palygorskite
- Disaggregation of palygorskite bundles
- Palygorskite-based adsorbents for organic dyes, metal ions and mycotoxins, etc.
- Palygorskite-based hydrogels for superabsorbents, controlled drug delivery and superadsorbents, etc.
- Palygorskite-based films, membranes, coatings, sponges and aerogels, etc.
- Palygorskite-based functional materials for water purification and soil remediation.
- Other palygorskite-based functional materials including composites, pigments, catalysts, supercapacitors and detection.