Journal of Chemistry

Special Issue on

Flotation Colloid Chemistry: Inter-particle, Inter-bubble and Bubble-particle Interactions

CALL FOR PAPERS

Flotation is an interfacial separation technique based on the differences in surface hydrophobicity of dispersed particles, and it plays a critical role in mineral processing industry. In a flotation pulp, mineral particles, bubbles, and reagents are highly dispersed and interact each other through high speed impeller agitation, which is a typical example of applied colloidal science. Colloidal interactions are the key process for successful flotation.

In recent years, with the rapid depletion of high-grade ore deposits, an increasing number of complex and refractory ores are being used as flotation feed, resulting in decreased flotation efficiency. Therefore, a comprehensive understanding of flotation colloid chemistry is a prerequisite to enhance practical flotation performances and adapt them for the treatment of complex and refractory ores. There has been a strong interest in the colloid chemistry of flotation. Particularly, surface and interfacial forces (van der Waals, electrical double layer, hydrophobic force, hydration, hydrodynamic, and adhesion forces) are of great importance in order to understand interparticle, interbubble, and bubble-particle interaction mechanisms in flotation pulp. However, due to the complexity of the flotation system and the difficulty in experimental verification, the physicochemical principles of flotation colloid interactions are still not well understood. It is, therefore, necessary to collect the latest work in this field, providing guidance for designing high-efficiency flotation processes.

This special issue aims to publish original research and review articles regarding all aspects of flotation colloid chemistry, which is of fundamental importance to both flotation science and engineering. New experimental methods, findings, and theoretical progress are especially welcome.

Potential topics include but are not limited to the following:

- The fundamental science of bubble-particle interactions, including collision, attachment, and detachment
- Flocculation and froth stability, including interparticle interactions and interbubble interactions
- Surface and interfacial forces
- Innovative experimental methods for investigating flotation colloids
- Novel approaches for regulating and controlling flotation colloid behavior, such as new flotation reagents
- Flotation kinetics

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/jchem/physical.chemistry/ffss/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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