Ultrasonic coal-wash for de-ashing and de-sulfurization : experimental investigation and mechanistic modeling

Ambedkar, B., author

Abstrak

This study focuses on the physical aspects of ultrasonic de-ashing and de-sulfurization, such as cavitation, streaming and their combined effects. Ambedkar Balraj proposes an ultrasound-assisted coal particle breakage mechanism and explores aqueous and solvent-based ultrasonic techniques for de-ashing and de-sulfurization. Ambedkar designs a Taguchi L-27 fractional-factorial matrix to assess the individual effects of key process variables. In this volume he also describes process optimization and scale-up strategies. The author provides a mechanism-based model for ultrasonic reagent-based coal de-sulfurization, proposes a flow diagram for ultrasonic methods of high-throughput coal-wash and discusses the benefits of ultrasonic coal-wash.