عنوان مقاله:

Dynamic Analysis of Co-Axial Non-Synchronous Rotating Assembly of Horizontal Decanter Centrifuges

محل انتشار:

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خلاصه مقاله:

In most of industrial works, merged solid and liquid phases as a single mixture must be separated to different phases. A centrifuge is a device that separate components of different densities using high rotational speed. The decanter centrifuge, which separates continuously solid materials from liquids in the slurry, has become a major processing tool in a wide range of liquid-solid separation applications. The main rotating assembly of decanter centrifuge consists of two co-axial non-sinchronous rotors, namely: the bowl and the scroll (conveyor). To determine the solid content in the outfeed, there is a differential speed between the decanter bowl and the scroll. The crucial part of mechanical design of a decanter centrifuge is dynamic analysis of rotating assemblies to meet the rotordynamics requirements. In this research dynamic analysis of the finite element model of a horizontal decanter centrifuge, which has been lead to design and build a successfully tested machine, is presented. The comparison of experimental values and numerical simulation shows that the presented finite element model is reliable to design of new horizontal decanter centrifuges, .according to the purchaser request and separation operation demands

کلمات کلیدی:

Dynamic analysis, Horizontal decanter centrifuge, Finite element method