Control Of Surge In Centrifugal Compressors By Active Magnetic Bearings

Surge Control of Active-magnetic-bearing-suspended Centrifugal Compressors sets out the fundamentals of integrating active magnetic bearing (AMB) rotor suspension technology in compressor systems, and describes how this relatively new bearing technology can be employed in active control of compressor surge initiation. The authors provide a self-contained and comprehensive review of rotordynamics and the fundamentals of AMB technology. The active stabilization of compressor surge employing AMBs in a machine is fully explored, from modeling of instability and controller design, to the implementation and experimental testing of the control algorithm in a specially-constructed, industrial-size centrifugal compression system. The results of these tests demonstrate the great potential of the new surge control method suggested in this text. This book will be useful for engineers in industries that involve turbocompressors and magnetic bearings, as well as for researchers and graduate students in the field of applied control. Whatever their level of experience, engineers working in the fields of turbomachinery, magnetic bearings, rotordynamics and controls will find the material in this book absorbing as all these important aspects of engineering are integrated to create a multi-disciplinary solution to a real-life industrial problem and the book is a suitable introduction to the area for newcomers. EAN/ISBN : 9781447142409 Publisher(s): Springer, Berlin, Springer, London Format: ePub/PDF Author(s): Yoon, Se Young - Lin, Zongli - Allaire, Paul E.

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