NOISE OF POLYPHASE ELECTRIC MOTORS

Jacek F. Gieras, Chong Wang and Joseph C.S. Lai

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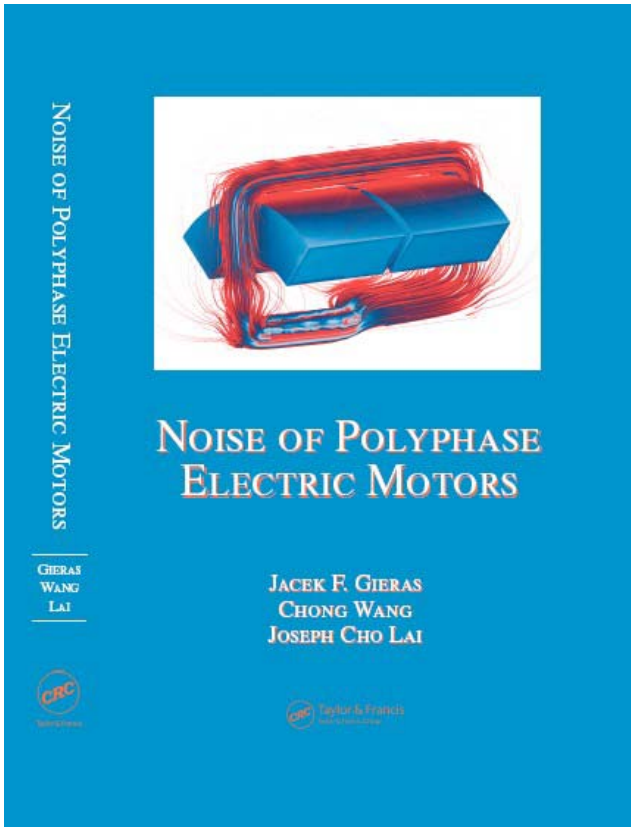

Controlling the level of noise in electrical motors is critical to overall system performance. However, predicting noise is more difficult and less accurate than for other characteristics such as torque-speed. Recent advances have produced powerful computational methods for noise prediction, and **Noise of Polyphase Electric Motors** is the first book to collect these advances in a single source. It is also the first to include noise prediction for permanent magnet (PM) synchronous motors.

Complete coverage of all aspects of electromagnetic, structural, and vibro-acoustic noise makes this a uniquely comprehensive reference. The authors begin with the basic principles of noise generation and radiation, magnetic field and radial forces, torque pulsations, acoustic calculations, as well as noise and vibration of mechanical and acoustic origin. Moving to applications, the book examines in detail stator system vibration analysis including the use of finite element method (FEM) modal analysis; FEM for radial pressure and structural modeling; boundary element methods (BEM) for acoustic radiation; statistical energy analysis (SEA); instrumentation including technologies, procedures, and standards; and both passive and active methods for control of noise and vibration

Spanning from fundamental theory to practical applications, this book…

- Provides the most up-to-date and comprehensive treatment of issues related to noise and vibration in electric motors
- Covers analytical, numerical, and statistical methods for noise analysis, providing concrete examples for each
- Examines vibration and sound radiation of cylindrical shells and the valid conditions of analytical equations
- Presents the fundamental equations for electromagnetic, structural, and acoustic computation of noise and vibration
- Explores SEA principles and applications to electric motors in detail

Noise of Polyphase Electric Motors gathers the fundamental concepts along with all of the analytical, numerical, and statistical methods into a unified reference. It supplies all of the tools necessary to improve the noise performance of electrical motors at the design stage.

Other recommended books of international standing authored by Jacek F. Gieras

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3. GIERAS J.F. and Piech, Z,J.: "***Linear Synchronous Motors***" CRC Press, LLC., Boca Raton, FL, U.S.A., 1999, 327 pages http://www.crcpress.com/shopping_cart/products/product_detail.asp?sku=1859&parent_id=&pc=
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5. GIERAS J.F.: "***Linear Induction Drives***", Clarendon Press, Oxford, U.K., 1994, http://www.oup.co.uk/isbn/0-19-859381-3

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