Special Issue

Magnetic Bearing Actuators

Message from the Guest Editor

Active magnetic bearings have several distinguishable advantages over other bearings—complete contact-free suspension of a rotating object, controllable and observable bearing force, lubrication-free and maintenance-free characteristics, etc. The range of applications steadily increases and novel systems are still being developed. This Special Issue is aimed at presenting this technology with a focus on the various aspects of actuators: Geometric design, choice of materials, modeling, analysis, measurement, control, and evaluation. Linear magnetic bearings for non-rotating objects are also targeted, even though "magnetic bearing" implies a rotating object. Encouraged contributions related (but not limited) to novel configurations/functions, designs for special-condition operations, power amplifier and drive schemes, sensing/estimating techniques, sophisticated control schemes, coupled with motor drive, minimization of loss, and reduction of hardware, are welcome.

Website:
http://www.mdpi.com/journal/actuators/special_issues/magnetic_bearing

Guest Editor

Prof. Dr. Takeshi Mizuno

Department of Mechanical Engineering, Saitama University, Shimo-Okubo 255, Skuara-ku, Saitama 338-8570, Japan

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Actuators
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
actuators@mdpi.com

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About the Journal

Message from the Editorial Board

We are just entering the Next Wave of Technology (NWT) where actuators will play the same role as the computer chip did for computers/social media approximately four decades ago. Just in the U.S., production of $1 trillion year of electromechanical systems (vehicles, orthotics, manufacturing cells, freight trains, aircraft, etc.) will be impacted by the NWT, all driven by actuators. Five key trends can be found for the future perspectives: “Performance to Reliability”, “Hard to Soft”, “Macro to Nano”, “Homo to Hetero” and “Single to Multi functional”. We invite papers that primarily impact these economic sectors; those illustrating basic scientific principles are also welcome.

Editors-in-Chief

Prof. Dr. Kenji Uchino
Emeritus Academy Institute, The Pennsylvania State University, University Park, PA 16802, USA

Prof. Dr. Norman M. Wereley
Department of Aerospace Engineering, University of Maryland, 3179J Martin Hall, College Park, MD 20742, USA

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