Special Issue

Intelligent Control for Pneumatic Servo System

Message from the Guest Editors

Pneumatic actuators are widely used in practical applications because they are small, have a relatively large output which can be easily obtained, and they are inexpensive and easy to use. Its applications are expanding from conventional simple work to fields requiring more advanced control. Along with this, several control methods have been applied to improve the control performance of pneumatic servo systems. In order to obtain the desired control performance for such a control system, it is necessary to add parameter optimization functions to the conventional linear control method, integrate methods to compensate for nonlinearity, or use several AI techniques with nonlinear compensation capabilities. The present Special Issue features papers which provide research approaches on intelligent pneumatic servo control methods with adaptive, optimal, learning, and nonlinearity compensating functions that can mitigate the adverse effects of parameter fluctuation characteristics and nonlinearity on control.

Guest Editors

Prof. Dr. Satoru Shibata
Graduate School of Science and Engineering, Ehime University, Matsuyama, Japan

Dr. Shenglin Mu
Graduate School of Science and Engineering, Ehime University, Matsuyama, 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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