Special Issue

Finite-Time/Fixed-Time Control for Mechanical Systems

Message from the Guest Editor

The development of finite-time/fixed-time control for mechanical systems to handle the effects of uncertainties, disturbances, and faults has been one of the important research topics in the control field. The successful implementation of finite-time/fixed-time control can offer many prominent characteristics for mechanical systems. The theories of finite-time and fixed-time control have been applied widely in many fields. However, the design of finite-time/fixed-time control faces many challenging issues. Hence, it is important to investigate the issues related to finite-time/fixed-time control. The focus of this Special Issue is on new approaches to the design and analysis of finite-time and fixed-time controls as well as their potential practical applications for mechanical systems. The topics to be covered include, but are not limited to:

- Theory of finite-time/fixed-time control;
- Theory of finite-time/fixed-time observer;
- Stability analysis of finite-time/fixed-time observer and control;
- Finite-time observer design and output feedback;
- Applications of finite-time/fixed-time control.

Guest Editor

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Deadline for manuscript submissions

closed (20 April 2022)

Actuators

an Open Access Journal by MDPI

Impact Factor 2.3
CiteScore 4.3

mdpi.com/si/78358

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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.

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