



Announcement

ASME Journal of Dynamic Systems, Measurement, and Control Special Issue on “Unmanned Mobile Systems” in memory of Professor J Karl Hedrick

Professor J. Karl Hedrick’s professional work was systematically concentrated on the development of nonlinear control theory and on its application to a broad variety of systems, including automated highway systems, formation flight of autonomous vehicles, powertrain control, embedded software design, and active suspension systems. The engineering society lost a profound researcher and intellectual who was a remarkable colleague, mentor, collaborator, contributor, and friend with many in the ASME Dynamic Systems and Control Division, ASME JDSMC editors and readers, and National Academy of Engineering. We would like to invite members of our engineering community to submit their works to this Special Issue in honor of Prof. Hedrick’s contribution to our profession.

The 21st century has been principally changing transport systems of three mediums of vehicle operation on the Earth – ground, air, and water. Autonomy, connectivity, electrification, and smart mobility have become a dominant core of research and engineering for virtually all vehicle applications. New technological paradigm shifts in vehicles and vehicle systems could feasibly emerge due to incoming inter-pervasion and transdisciplinary convergence of applied technical, natural, and social sciences and engineering fields. Such rapidly expanding research frontiers require innovative approaches to all areas of unmanned vehicle dynamics and unmanned system conceptual designs to make them receptive to technological novelties.

This Special Issue specifically targets new research areas of unmanned vehicles and unmanned vehicle systems, i.e., unmanned mobile systems (UMS), in strong connection with transdisciplinary knowledge.

UMS applications include unmanned ground vehicles, unmanned aerial vehicles, unmanned underwater vehicles, and unmanned inter-medium vehicles for various personal and cargo transportation, construction and forestry, farming, scientific research, infrastructure monitoring, surveillance and military, etc.

The Special Issue will be comprised of, but not limited to, the following topics and their potential combinations:

- UMS multi-domain dynamics in interaction with multi-phase environment in different media
- UMS transdisciplinary-inspired concepts for safe and secure performance and energy efficiency
- Intelligent morphing and dynamics of UMS
- Challenges in communication and UMS dynamics in three media and inter-medium environments
- Intelligent sensing and actuation, and control for UMS agile dynamics and mission fulfillment
- Localization problems, landscape, air and aquatic environment sampling
- Fault-tolerance in severe, uncertain, and adversarial environments

- Human-in-the-loop and UMS intelligent decision making related to dynamics and mission fulfillment
- Integration of UMS into the manned and unmanned traffic of their respective media for their mass adoption
- Artificial intelligence and social behavior factors for communication and dynamic interaction between UMS and UMS with Infrastructure in a particular medium and inter-medium environments

Publication Target Dates

Deadline for submissions: April 10, 2018
 Review, revision, and acceptance notification: August 12, 2018
 Final paper due: September 3, 2018

Submission Information

To submit a manuscript for consideration for the Special Issue, please visit the journal website at: <https://journaltool.asme.org/home/JournalDescriptions.cfm?JournalID=4&Journal=DS> and choose the link Submit Papers. Select the Journal of Dynamic Systems, Measurement, and Control and then choose the Special Issue option for “*Unmanned Mobile Systems*”.

Early submissions are strongly encouraged. Papers submitted by April 10, 2018 will be reviewed in time for inclusion in the Special Issue. Papers received after that date may still be considered for the Special Issue, if time and space permit. Papers that are not ready for production in time for inclusion in the Special Issue may be considered for a regular issue of the journal.

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