

## Call for papers - Special Issue on “Physical Human-Robot Interaction and Co-Manipulation: Mechatronics Approaches”

Physical Human-Robotics Interaction (pHRI) consists of physical interactions between humans and robots in order to perform common or independent tasks in a shared and close area by ensuring certain performances, safety and human ergonomics. The interaction can optionally include contact (either continuously or intermittently) where the level of leadership of each partner (human and robot) has to be defined. Applications of pHRI are nowadays clear, such as Industry of future like Industry 4.0, human rehabilitation, sport training assistance, or medical and surgery assistance. One example of interesting and generic pHRI industrial task is co-manipulation of objects for their storage, transportation, assembly, or fabrication. In this, applying the established tools in term of modeling, control and trajectory generation from standard robotic manipulation is not anymore sufficient to accomplish the tasks. The presence of the human through the co-manipulated object introduces several challenges: uncertainties in the overall model, unpredictability in the human behavior, human ergonomics and safety during the interaction, possible human tremor or fatigue disturbing the robot during the task, limited measurement for the overall interaction,.... Therefore, considerable efforts are being made to target efficient pHRI tasks and we witness an increase of publications of this field in the literature over these last years.

The objective of this special issue is to collect articles that report the most recent accomplishments and results in the area of human-robot interaction. The special issue is an opportunity for researchers and practitioners to present the context or applications of their pHRI works, the challenges they are faced with, and the scientific approaches they propose to handle these, as well as the results obtained. Contributions from industry are encouraged, submitted manuscripts are expected to report experimental results and papers must contain originality. Potential topics include but are not limited to:

- Innovative mechatronic tools for pHRI
- Innovative mechatronic tools for safety or ergonomics during pHRI
- Actuation and measurement in pHRI
- Novel robotic mechanisms and systems for pHRI
- Parameters identification and signals estimation in pHRI
- Control in pHRI
- Tasks or trajectory planning in pHRI

### Manuscript preparation

Papers must be prepared in accordance with Elsevier policy. Instructions and *Guide for Authors* are available online at: <https://www.elsevier.com/journals/mechatronics/0957-4158/guide-for-authors>

### Manuscript submission

All contributions should be submitted online at: <https://www.editorialmanager.com/mech/>. Each submission must be accompanied with a cover letter specifying that it is intended to the special issue on “Physical Human-Robot Interaction and Co-Manipulation: Mechatronics Approaches”. All manuscripts will go through peer review process. Important dates are shown below and papers submitted before the deadlines will be treated and will undergo process earlier.

### Important dates

|  |                   |
|--|-------------------|
| Initial submission deadline.....                         | June 1, 2021      |
| Completion of first review.....                          | September 1, 2021 |
| Submission of revised paper.....                         | November 1, 2021  |
| Completion of second review.....                         | December 15, 2021 |
| Submission of revised paper.....                         | February 1, 2022  |
| Completion of final review.....                          | March 1, 2022     |
| Submission of final manuscripts and Copyright forms..... | March 15, 2022    |
| Publication.....   | June 1, 2022      |

### Guest editors

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