1. Record Nr. UNINA9910485027603321

Titolo	Aerial Robotic Manipulation : Research, Development and Applications / / edited by Anibal Ollero, Bruno Siciliano
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-12945-4
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (XXI, 385 p. 248 illus., 225 illus. in color.)
Collana	Springer Tracts in Advanced Robotics, , 1610-7438 ; ; 129
Disciplina	629.1326 629.892
Soggetti	Robotics Automation Artificial intelligence Robotics and Automation Artificial Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Aerial Robots with Arms: Design, Modelling, and Mechatronics Aspects -- Control of Aerial Manipulators -- Perception for Aerial Robotic Manipulation -- Planning for Aerial Robotic Manipulation -- Applications -- Conclusions and Future Directions.
Sommario/riassunto	Aerial robotic manipulation integrates concepts and technologies coming from unmanned aerial systems and robotics manipulation. It includes not only kinematic, dynamics, aerodynamics and control but also perception, planning, design aspects, mechatronics and cooperation between several aerial robotics manipulators. All these topics are considered in this book in which the main research and development approaches in aerial robotic manipulation are presented, including the description of relevant systems. In addition of the research aspects, the book also includes the deployment of real systems both indoors and outdoors, which is a relevant characteristic of the book because most results of aerial robotic manipulation have been validated only indoor using motion tracking systems. Moreover, the book presents two relevant applications: structure assembly and

inspection and maintenance, which has started to be applied in the industry. The Chapters of the book will present results of two main European Robotics Projects in aerial robotics manipulation: FP7 ARCAS and H2020 AEROARMS. FP7 ARCAS defined the basic concepts on aerial robotic manipulation, including cooperative manipulation. The H2020 AEROARMS on aerial robot with multiple arms and advanced manipulation capabilities for inspection and maintenance has two general objectives: (1) development of advanced aerial robotic manipulation methods and technologies, including manipulation with dual arms and multi-directional thrusters aerial platforms; and (2) application to the inspection and maintenance.