

# Preface

The biennial CONTROLO conferences are the main events promoted by the Portuguese Association for Automatic Control—APCA, national member organization of the International Federation of Automatic Control—IFAC.

The CONTROLO 2016—12th Portuguese Conference on Automatic Control, Guimarães, Portugal, September 14–16, was organized by Algorithm, School of Engineering, University of Minho, in partnership with INESC TEC.

This edition of the conference has been approved for co-sponsorship by IFAC.

The conference had three partners: CEA—Comité Español de Automática, SPEE—the Portuguese Association for Education Engineering, and SPR—the Portuguese Association for Robotics.

We would like to thank the support of the Organizing Committee and the invaluable contributions of the Scientific Committee members, External Reviewers, Invited Speakers and Session Chairs. Last but not least, we want to thank the authors, for whom and by whom this event was made to happen.

We would also like to acknowledge EasyChair for their conference management system, which was freely used for managing the paper submission and evaluation process. Special thanks are due to the people in Springer.

Papers submitted to the conference were anonymously peer-reviewed by the Scientific Committee with a distribution operated by the EasyChair reviewer assignment algorithm. Based on the reviewers' ratings, 81 submissions were accepted conditionally to reviewers' recommendations being implemented.

A wide range of topics are covered by the 74 papers published in this volume cover. Of them 30, of a more theoretical nature, are distributed among the first five parts: Control Theory; Optimal and Predictive Control; Fuzzy, Neural and Genetic Control; Modeling and Identification; Sensing and Estimation.

Of a more applied nature, 44 papers are presented in the following eight parts: Robotics; Mechatronics; Manufacturing Systems and Scheduling; Vibration Control; Applications in Agricultural Systems; Power Systems Applications; General Applications; Education.

We believe that the papers in this volume, from cutting-edge theoretical research to innovative control applications, show expressively how automatic control can be used to increase the well-being of people.

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