

Preface

Special Issue on Design, Fabrication and Economy of Welded Structures

This special issue covers the papers presented at a joint seminar organized by members of the International Institute of Welding, Commission XV from Hungary, Korea, and Japan to exchange knowledge of the design, manufacturing, and maintenance of welded steel structures in mechanics and civil engineering. Research initiatives in these countries are introduced to foster strong linkages between them. This special issue provides a wide range of case studies, empirical research, and professional analysis based on the study of relevant sources to aid academic teachers, researchers, and professionals working in structural design. The special issue is unique in that it does not focus on a specific theme in structural engineering. Instead, it offers insights into the world and practices of co-disciplines that are inextricably related to structural engineering.

This edition contains articles from the field of contactless strain measurement at steel structures "Monitoring of strains and deflections of steel cantilever using a contactless measurement method", optimization of wheel column "Optimal Design of Wind Wheel Column", experimental measurements of steel elements in fire "Experimental validation of heat propagation: results of the numerical modeling for the real scale steel structural element and different assigned models subjected to a simulated fire", a new heat input model "Proposal of Heat Input Model for Heating Correction on Welded Steel Structural Members", design of stiffening plates "Optimized Trapezoidal Stiffened Plates under Uniaxial Compression and Suddenly Applied Pressure", effect of heating on high strength bolts "An Investigation on Axial Force Reduction of High-strength Bolts by Induction Heating for Paint-coating Removal", the steel cross-section comparisons at higher temperatures, "Comparison of different leg cross sections in case of fire," and damage identification "Improving optimization-based inverse analysis using direct inverse maps: A dynamic damage identification case study," fatigue tests on pipelines "Full-scale Fatigue and Burst Tests on Notched Pipeline Girth Welds under Complex Loading Conditions".

We are grateful to all of the writers and co-authors for their dedication to developing contributions for this special issue and sharing their findings with the journal. Last but not least, we would like to thank the editorial board of the journal Acta Polytechnica Hungarica, particularly Ms. Anikó Szakál, for technically preparing and managing this issue, as well as Prof. Imre J. Rudas and Prof. Levente Kovács, for their help in publishing this Special Issue.

Károly Jármai

Guest Editor