Special Issue on Advanced Tube Hydroforming Technology for Lightweight Components

PREFACE

This special issue includes 14 papers consisting of selected papers from the fifth International Conference on Tube Hydroforming (TUBEHYDRO2011) and newly submitted papers on tube hydroforming. The conference was held at Noboribetsu, Hokkaido, Japan, July 24–27, 2011, as a series of conferences started in 2003 at Kariya city, Japan co-hosted by Tube Forming Committee, the Japan Society for Technology of Plasticity (JSTP), and the Korean Society for Technology of Plasticity (KSTP). The second conference was held in Gyeongju, Korea in 2005, the third Harbin, China in 2007 in which the China Society for Technology of Plasticity (CSTP) joined, and the fourth Kaohsiung, Taiwan in 2009. This TUBEHYDRO2011 is the fifth in the TUBEHYDRO conference series. This conference was attended by 78 participants—approximately 50% from Japan and 50% from 7 other countries. The conference extended three days including a half-day plant tour, and consisted of three plenary papers conveying the state-of-the-art in tube hydroforming in Japan, China and Taiwan, and 45 technical papers. Presentations in this conference cover a broad range of hydroforming: ERW and laser welded tubes for hydroforming, formability of tube hydroforming, experimental/theoretical results of tube hydroforming, numerical simulation of tube/sheet hydroforming, design of hydroforming die, hydropiercing and hydrojoining, CNC bending and laser cutting related to tube hydroforming, sheet hydroforming and hydrobulging, new processes of hydroforming, and new materials for hydroforming.

On March 11, 2011, the northeastern district of Japan was heavily damaged by earthquake and tsunami. At the same time, the nuclear plant accidents occurred in Fukushima. We express our appreciations for a number of sympathy letters on the catastrophe we’ve received from our many friends in overseas. It was only four months scheduled before this conference. Actually this tragedy happened in a wide area including the Tohoku and Kanto areas in Japan. The local executive committee argued seriously many times whether this conference should be held or postponed and finally it was held. As a result, we were proud of holding this conference as scheduled beyond the tragedy. This was due to receiving so many strong supports and effective advices from our colleagues, supporting organizations and companies.

Last, but not the least, we would like to extend our appreciation to the conference sponsors: the AMADA Foundation, the Die and Mold Technology Promotion Foundation, ISIJ Division of Processing for Quality Products, and the 50th anniversary foundation of JSTP. Without their supports, it would have been impossible to have such a successful conference. We would also like to thank all participants for their contributions to the proceedings and the members of executive committee and organizing committee for their hard work in reviewing submitted papers and in maintaining the high standards of the conference including a new session named “young researchers forum” and selection of “best paper awards”. The conference secretariat Prof. Yoshida is especially acknowledged for his great efforts for ensuring the success of the conference.

March 16, 2012

Guest Editors:
Toshihiko Kuwabara¹
Takaaki Iguchi²

¹Tokyo University of Agriculture and Technology, Japan
²JFE Steel Co., Japan