The 1st International Conference on Spring Technologies

November 16-18, 2015 Tokyo, Japan

Hosted by Japan Society of Spring Engineers (JSSE)

Supported by Japan Spring Manufacturers Associations (JSMA), Society of Shotpeening Technology of Japan (JSSP) and Association of Shape Memory Alloys (ASMA)

Schedule

Monday, November 16

16:30 - 17:00 Registration

17:00 - 19:00 **Welcome Reception**

Surugadai Campus of Meiji University

Japanese RAKUGO will be played

Tuesday, November 17

8:45 - 9:15 Registration

9:15 - 17:45 **Oral / Poster Session, Exhibition**

UDX Gallery in Akihabara

Exhibition will be opened until 20:00

17:30 - 18:00 Registration to Banquet

18:00 - 20:00 **Banquet**

KOTO(Japanese musical instrument) performance

Wednesday, November 18

8:30 - 18:00 **Optional Excursion**

Mt. Fuji area

Lunch at a Japanese style restaurant

View of Mt. Fuji from Oshino village

Visit Kitaguchihongu Fuji Sengenjinja

Explore Narusawa Ice Cave

Session Program

Tuesday, November 17

9:15 **Opening**

Katsuji Tosha; ICST-1 Chair

9:20 **Session 1** *Chair : Eckehard Mueller, Yoshiyuki Furuya*

Effect of Silicon, Chromium and Molybdenum on Resistance to Temper Softening of High Carbon Martensitic Steel

Shinya Teramoto, Manabu Kubota, Jun Takahashi ; Nippon Steel & Sumitomo Metal Corporation

Influence of Temperature on the Fatigue Strength of Disc Springs and Stacks of Disc Springs

Andre Spies, Desislava Veleva, Jörg Beyer, Matthias Oechsner ; Technische Universitaet Darmstad

Improvement of Torsional Fatigue Limit by Shot Peening for Spring Steel Containing a Crack-like Surface Defect

Koji Takahashi, Makiko Nakagawa, Hitonobu Koike; Yokohama National University
Hideki Okada; NHK Spring co., Ltd.

Threshold Stress Intensity Factor of Crack Propagation of Delayed Fracture for Spring Steel and Design Method for Preventing Delayed Fracture

Yurika Goto, Akira Tange; NHK Spring co., Ltd.
Eiji Tsujimatsu ; SUMIHATSU co.,Ltd.

10:40 Coffee Break **(Poster & Exhibition)**

11:00 **Keynote Speech**

Chair : Shinichi Nishizawa

Development of Fuel Cell Vehicle in Toyota

Seiji Sano ; *Toyota Motor Corporation*

12:00 Lunch **(Poster & Exhibition)**

13:20 **Session 2** *Chair : Mark Hayes, Koji Takahashi*

Evaluating Compressive Residual Stress Depth Distribution by Eddy Current

Yoshiyasu Makino ; *SINTOKOGIO, LTD.*

The Difficulty to Calibrate an X-ray Diffractometer to Measure Residual Stresses. Is an absolute precise measurement possible?

Eckehard Mueller ;*Bochum University of Applied Sciences*

Evaluation of the Fatigue Process of Type 316 by Positron Annihilation Lifetime Spectroscopy

Naoya Uesugi, *Kanehisa Hattori;TOYO SEIKO CO., LTD.*
Yoshihiko Uematsu, Toshifumi Kakiuchi; Gifu University

Current Developments in the Experimental Durability Evaluation of Coated Coil Springs under Realistic Loading

Sebastian Hoffmann,*Steffen Röding, Matthias Decker; IABG mbH*

14:40 Coffee Break **(Poster & Exhibition)**

15:00 **Session 3** *Chair : Masao Hayakawa, Wataru Nakao*

Finite Element Simulation of Shot Peening on Helical Springs

Ulf Kletzin ; *Ilmenau Technical University*

On the Effects of Heat Treatment on the Properties of Compression Springs

Mark Hayes ;*Spring Expert*

In-Process-Quality-Control with Temperature Controlled Spring-End-Grinding

Uwe-Peter Weigmann,*Klaus Wurste; WAFIOS AG*

16:00 Coffee Break **(Poster & Exhibition)**

16:20 **Session 4** *Chair : Atsumi Ohtsuki, Toshio Kuwabara*

Developing a Complete Simulation Environment on the Example of Coil Springs

Anders Winkler; *Dassault Systemes AB*
Kazuhiro Maeda, Alan Tan; Dassault Systemes K.K.

Reverse Engineering Based Trunk Lid Torsion Bar Design Method

Nobuhisa Yasuda, *Shinichi Nishizawa, Maiko Ikeda, Tadashi Sakai; NHK International Corporation*

Optimum Design Approaches for Disk Springs

Madoka Kuno, *Kazuyoshi Nono,*
Shoji Ichikawa ; Chuo Spring Co., Ltd.
Daichi Oike; Chuhatsu Techno Co., Ltd.

The Optimal Design of a Side Load Helical Spring for MacPherson Vehicle Suspension System

Wen Huang, *Liwen Liu, Hong Lu; Yanshan University*

17:40 **Closing**

Yuji Nakasone; JSSE Chair

ICST-1

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Posters

Influence of Alloying Element on Corrosion Fatigue Life of Spring Steels

Kosuke Kimura, Kazuyoshi Kimura; Daido Steel Co., Ltd.

Prediction of Fatigue Limit Improvement and Rendering Crack Harmless by Peening for Welded Joint Containing a Crack at the Weld Toe Zone

Ryutaro Fueki, Hisanori Abe, Koji Takahashi, Kotoji Ando; Yokohama National University
Keiji Houjou; Oyama National College of Technology
Mitsuru Handa; TOYO SEIKO CO., Ltd

General analytic trajectory function of cam profile to suppress residual oscillation in automation and its relation to input shaper

Shigeo Kotake, Ryo Ichizaki ; Mie University

Improvement of Fatigue Strengths by Cavitation Peening and Shot Peening for High Strength Aluminum Alloy Containing a Crack-like Surface Defect

Takaya Suzuki, Hiroko Osedo, Koji Takahashi; Yokohama National University

The Key Technology Research on Hot Formed Helical Compression Springs-International Standard of Technical Specifications

De-cheng Wang; China Academy of Machinery Science and Technology
Ying Jiang, Peng Cheng; China Productivity Center of Machinery

Exhibition

TOYO SEIKO CO.,LTD.

SINTOKOGIO.,LTD.

SHINKO MACHINE TOOL CO., LTD.

HOKO ENGINEERING CO.,LTD.

PULSTEC INDUSTRIAL CO., LTD.

NIPPON STEEL & SUMIKIN SG WIRE CO.,LTD.
(SUZUKI METAL INDUSTRY CO.,Ltd.)

SOCIETY OF SHOT PEENING TECHNOLOGY OF JAPAN

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http://www.scoop-japan.com/kaigi/icst1/

Japan Society of Spring Engineers (JSSE)

http://www.jsse-web.jp