The 12th International Conference on Tube Hydroforming

TUBEHYDRO 2026

Conference Program

May 15-18, 2026, Shanghai, China

The 12th International Conference on Tube Hydroforming

May 15-18, 2026

Shanghai, China

Organized by

Harbin Institute of Technology, China
Shanghai Jiao Tong University, China
Key Laboratory of Precision Hot Forming
State Key Laboratory of Mechanical System and Vibration
China Mechanical Engineering Society

Co-organized by

China Society for Technology of Plasticity, CMES
Japan Society for Technology of Plasticity
Korean Society for Technology of Plasticity
Baoshan Iron & Steel Co., Ltd.
COMAC Shanghai Aircraft Manufacturing Co., Ltd.

Sponsors

MAXIMATOR (Shanghai) Fluid Engineering Co., Ltd.
DOM Optics Technology (Shanghai) Co., Ltd

Table of Contents

Welcome Message

TUBEHYDRO 2026 is the 12th international conference on tube hydroforming. Following the previous 11 TUBEHYDRO conferences held in Japan, South Korea, Thailand, and China, this edition will not only focus on the latest experimental, computational, and theoretical research achievements in tube forming and hydroforming technology, but also address related topics such as AI-enabled forming, industry application development, large-scale production solutions, as well as quality control, mold life, and energy conservation. Delegates will have the opportunity to exchange their new ideas and achievements, and even share cultures. We welcome you to share your insights at the conference and achieve fruitful results together with us.

Wei Liu
Chair of TUBEHYDRO 2026
Harbin Institute of Technology

Shuhui Li
Chair of TUBEHYDRO 2026
Shanghai Jiao Tong University

Topics and Sessions

I. Tube Forming Technology
II. Hydroforming Technology
III. Plasticity Theory &Constitutive Modeling
IV. AI & Finite Element Simulation
V. Advanced Forming & Processing Technology
VI. Material Characterization & Measurement Technology

Committee

Honorary Chair

Shijian Yuan, China

Conference Chair

Wei Liu, China

Shuhui Li, China

Steering Committee

Toshiya Teramae, Japan
Ken-ichi Manabe, Japan
Shijian Yuan, China
Yeong-Maw Hwang, China
Purit Thanakijkasem, Thailand
Myoung-Gyu Lee, Korea

Organizing Committee

Kehuan Wang, China
Xiaolei Cui, China
Huabo Zhou, China
Bin Gu, China
Ji He, China
Peihao Geng, China

Domestic Scientific Committee

Heng Li, China
Lihua Zhan, China
Cong Han, China
Junying Min, China
Zhili Hu, China
Yizhe Chen, China
Liang Huang, China
Xifeng Li, China
Xinbing Yun, China
Wei Wu, China
Guannan Chu, China
Fei Han, China
Yongming Wang, China
Gang Fang, China
Chaoyang Sun, China
Zicheng Zhang, China
Jianwei Liu, China
Zejun Tang, China
Yong Xu, China
Xiaosong Wang, China
Aijie Xu, China
Guangjun Li, China
Kui Li, China
Xiaohui Cui, China
Xuefeng Xu, China
Haiyan Yu, China
Tiejun Gao, China

International Scientific Committee

Toshihiko Kuwabara, Japan
Takashi Kuboki, Japan
Takuo Nagamachi, Japan
Tsuyoshi Furushima, Japan
Sadakatsu Fuchizawa, Japan
Jun Chen, China
Gang Liu, China
Wencai Xie, China
Mei Zhan, China
Shengdun Zhao, China

Yukihisa Kuriyama, Japan
Takashi Kuboki, Japan
Masaaki Mizumura, Japan
Atsushi Shirayori, Japan
Nínshu Ma, Japan
Noah Utsumi, Japan
Yoshinori Yoshida, Japan
Shoichiro Yoshihara, Japan
Toshiya Teramae, Japan
Shohei Kajikawa, Japan
Takahiro Makiyama, Japan
Numpon Mahayotsanun, Thailand
Sansot Panich, Thailand
Vitoon Uthaisangsuk, Thailand

Zhubin He, China
Xiaobo Fan, China
Yong Li, China
Luoxing Li, China
Haibo Su, China
Qi Zhang, China
Zicheng Zhang, China
Huiwen Hu, China
Fuh Kuo Chen, China
Yeong-Maw Hwang, China
Jinn-Jong Sheu, China
Gow-Yi Tzou, China
Sasawat Mahabunphachai, Thailand
Purlt Thanakijkasem, Thailand

Registration

Early registration (before Jan. 15, 2026)	Regular registration (before May. 14, 2026)	On-site registration (May 15-18, 2026)
Regular ￥3600/$500	Regular ￥4000/$550	Regular ￥4000/$550
Student ￥2200/$300	Student ￥2600/$350	Student ￥2600/$350
Accompanying person ￥2200/$300		

Registration Desk

May 15, 2026 (Fri.): 14:00~20:00

May 16, 2026 (Sat.): 08:00~09:00

Hotel Lobby Registration Desk, Shanghai Ship Hotel (上海大船酒店)

Address: No. 4988, Hangnan Road, Fengxian

Tel: +86 (0)21 33650888

Conference Schedule

May 15, 2026 (Fri.)

Time	Program	Place
14:00~20:00	**Registration**	Hotel Lobby Registration Desk
18:00~20:00	Dinner	7th Floor, Sha Tan Hall （沙滩厅）

May 16, 2026 (Sat.)

08:00~09:00	**Registration**	Hotel Lobby Registration Desk
09:00~09:15	**Opening Ceremony**	2nd Floor, Li Zhou Hall （丽洲厅）
09:15~10:15	**Plenary Report**	
10:15~10:30	Group photo	
10:30~11:00	Coffee break	
11:00~12:00	**Plenary Report**	2nd Floor, Li Zhou Hall （丽洲厅）
12:00~14:00	Lunch	7th Floor, Sha Tan Hall （沙滩厅）
14:00~15:30	**Plenary Report**	2nd Floor, Li Zhou Hall （丽洲厅）
15:30~16:00	Coffee break	
16:00~17:20	**Keynote Report**	2nd Floor, Li Zhou Hall （丽洲厅）
17:20~18:00	Break	
	Steering Committee Meeting	2nd Floor, Gui Bin Hall （贵宾厅）
18:00~20:00	**Banquet**	5th Floor, Hong Xing Hall （鸿兴厅）

May 17, 2026 (Sun.)

Time	Program	
	Sub Venue 1	**Sub Venue 2**
	2nd Floor, Xi Dao Hall （丽洲西岛厅）	2nd Floor, Yang Guang Hall （阳光岛厅）
09:00~10:15	**Tube Forming Technology**	**Plasticity Theory &Constitutive Modeling**
10:15~10:45	Coffee break	
10:45~12:00	**Tube Forming Technology**	**AI & Finite Element Simulation**
12:00~14:00	Lunch	7th Floor, Sha Tan Hall （沙滩厅）
14:00~15:30	**Hydroforming Technology**	**Advanced Forming & Processing Technology**
15:30~16:00	Coffee break	
16:00~17:30	**Hydroforming Technology**	**Material Characterization & Measurement Technology**
18:00~20:00	Dinner	7th Floor, Sha Tan Hall （沙滩厅）

May 18, 2026 (Mon.)

08:45~9:00	**Hotel Lobby**	
09:00~12:00	**Technical Visit 1**	COMAC Shanghai Aircraft Manufacturing Co., Ltd.
	Technical Visit 2	ZwickRoell China Experience Center and DOM Optical Experience Center
12:00	Return to the Hotel	

Conference Program

May 16, 2026 (Sat.)

9:00~9:15	**Opening Ceremony** Prof. Wei Liu
9:15~10:15	**Plenary Report** Prof. Shuhui Li
9:15~9:45	*Biaxial testing of cylindrical tube test pieces for enhancing the accuracy of material characterization* Emeritus Prof. Toshihiko Kuwabara
9:45~10:15	*Hot tube hydroforming combined with press hardening of steel: process development and material characterization* Prof. Yannis P. Korkolis
10:15~10:30	**Group photo**
10:30~11:00	**Coffee break**
11:00~12:00	**Plenary Report** Prof. Yannis P. Korkolis
11:00~11:30	*Microstructure-based understanding of anisotropic plasticity in polycrystalline metals* Prof. Myoung-Gyu Lee
11:30~12:00	*The Bauschinger effects and springback behavior of aluminum alloys at cryogenic temperatures* Prof. Shuhui Li
12:00~13:00	**Lunch**
14:00~15:30	**Plenary Report** Prof. Gang Liu
14:00~14:30	*Machine-learning based plasticity and fracture modeling in combination with high-throughput testing* Prof. Dirk Mohr
14:30~15:00	*Instrumented strain-gradient consolidation of oxide-engineered aluminum chips into an extruded profile* Prof. Numpon Mahayotsanun
15:00~15:30	*Accurate measurement and constitutive modeling of anisotropic metal tubes for hydroforming* Prof. Xiao-Lei Cui
15:30~16:00	**Coffee Break**

16:00~17:20	**Keynote Report** Prof. Myoung-Gyu Lee
16:00~16:20	*Process and feeding path design in compound hydroforming of metal bellows* Prof. Yeong-Maw Hwang
16:20~16:40	*Shape and dimensional accuracy and quality in T-shaped forming of metal microtubes* Prof. Shoichiro Yoshihara
16:40~17:00	*Numerical modeling of hydrogen embrittlement behavior of TRIP Steels under hydrogen exposure* Prof. Jinheung Park
17:00~17:20	*Analysis on deformation mechanism of integral forming for pipes with variable wall thickness and diameter* Prof. Yizhe Chen
17:20~18:00	**Break & Steering Committee Meeting**
18:00~20:00	**Banquet**

May 17, 2026 (Sun.)

	Sub Venue 1-Tube Forming Technology Prof. Toshihiko Kuwabara	**Sub Venue 2-Plasticity Theory & Constitutive Modeling** Prof. Zixuan Li
9:00~9:15	*The effect of rotational speed on wall thickness distribution in rotary forming of tubes with multi-roller* Dr. Shiliang Zhang	*Research progress on the integrated process of forming–reaction for thin-walled intermetallic components* Prof. Jie Zhao
9:15~9:30	*Effect of approach semi-angle and backward stress on forming characteristics in tube drawing considering measured die geometry* Ryoga Okada	*Unsupervised learning approach for constitutive modelling and investigation of thermal forming limits under continuous nonlinear strain paths* Dr. Zhihao Wang
9:30~9:45	*Nonuniform corner filling behavior during hydro-pressing process of TA18 titanium alloy tubes* Ruihua Chu	*Advanced strength prediction for complex forming processes based on a distortional hardening model* Seungwoo Kim
9:45~10:00	*Parametric study on mandrel for high-quality rotary draw bending tubes* Yanhong Zhou	*Construction of a ductile fracture criterion for hot shear spinning* Gangfeng Xiao

10:00~10:15	*Logarithmic strain ratio for evaluation of wall thickness changes in ultra-thin-walled stainless steel tube drawing processes* Qihao Xu	*Anisotropic yield and flow behavior of work-hardened 304L stainless steel sheet* Shiyu Wen
10:15~10:45	**Coffee Break**	
10:45~12:00	**Sub Venue 1-Tube Forming Technology** Prof. Jinheung Park	**Sub Venue 2-AI & Finite Element Simulation** Prof. Yeong-Maw Hwang
10:45~11:00	*Two-step upsetting of 316L stainless steel tubes with intermediate induction heating treatment* Prof. Zeran Hou	*Finite element investigation of hybrid riveted joints in Ni-plated steel with Al rivet and polymer insert* Dr. Jong-Hwa Hong
11:00~11:15	*Key technologies for anti-fatigue manufacturing of roll-formed flareless titanium alloy tube connectors* Dr. Rongxia Zhang	*Training from experiments: machine learning based plasticity and fracture models* Dr. Xueyang Li
11:15~11:30	*A deep drawing-inspired technique for quantitative in-plane anisotropy characterization of thin-walled metallic tubes* Prof. Yanli Lin	*Formation mechanism & interfacial bonding characteristics of 45 carbon steel/316 stainless steel bimetallic composite tubes manufactured by three-roll corrugated skew rolling* Prof. Zixuan Li
11:30~11:45	*Intelligent prediction of springback and manufacturing deviation control for complex spatial pipes* Dr. Chang Gao	*FEM-DEM coupling simulation and process optimization for solid granules bulging of aluminum alloy four-way tubes* Dr. Haiwei Shi
11:45~12:00	*Research on the composite integral manufacturing method for large-diameter aluminum alloy bellows* Dr. Caiyuan Lin	*Inline 3D reconstruction of AHSS product in 6-axis free-form bending machine using laser line scan data and RGB-D data* HyunKyo Lim
12:00~13:00	**Lunch**	
14:00~15:30	**Sub Venue 1-Hydroforming Technology** Prof. Purit Thanakijkasem	**Sub Venue 2-Advanced Forming & Processing Technology** Prof. Shoichiro Yoshihara
14:00~14:15	*Development of multi-directional forced lubrication technology in tube hydroforming* Hiroki Tsutsumi	*A corrugated metal-cored CFRP sandwich structure with enhanced gas tightness and structural performance* Prof. Yong Li

14:15~14:30	*In-process monitoring and intelligent adaptive control of springback in tube bending* Prof. Jun Ma	*Evaluation of finite element modeling and material utilization in forming of dimpled aluminum* Prof. Purit Thanakijkasem
14:30~14:45	*Influence of anisotropy on formability in high-speed bulging process verified by electrohydraulic forming FEA* Yoonho Jang	*Enhancing microchannel profile quality in ultra-thin sheet microforming through tuning grain size and orientation* Dr. Rui Zhang
14:45~15:00	*Integrated technology of reactive synthesis and internal pressure forming for NiAl intermetallic thin-walled components* Prof. Peng Lin	*Investigation of chevron crack initiation during warm drawing of pearlitic steel bar* Takahiro Aoki
15:00~15:15	*Hydroforming process and defect control of 2219 aluminum alloy concave basin-shaped parts* Yuanpeng Li	*Two-step press forming for producing deep cup with flange* Nagato Negami
15:15~15:30	*Development of new FEM model for forced lubrication in tube hydroforming and its application to clarify deformation* Motoki Sasaki	*A modified 2D fractal Cantor set model for predicting degree of Intimate contact during CF/PEEK pre-consolidation* Min Ma
15:30~16:00	**Coffee Break**	
16:00~17:30	**Sub Venue 1-Hydroforming Technology** Prof. Yizhe Chen	**Sub Venue 2-Material Characterization & Measurement Technology** Prof. Yong Li
16:00~16:15	*Friction behavior in hydroforming process of C1220 copper microtube* Prof. Zicheng Zhang	*Flow curve determination with the hot-tube-bulge-test: implementation of strain-rate control* Jan Flesch
16:15~16:30	*Optimization of loading path parameters in incremental liquid impact forming for T-shaped tubes using response surface methodology* Prof. Jianwei Liu	*Flanging behavior of a 6061 aluminum alloy thin-walled tube at cryogenic temperature* Prof. Wangjun Cheng
16:30~16:45	*ISO standardization in metal testing – updates on tensile and formability testing* Dr. Johannes Aegerter	*Effect of hot-pressing temperature on microstructural defects and mechanical properties of SiCf/TC17 composites* Lingyu Zhang

16:45~17:00	*Low-temperature integrated superplastic forming/diffusion bonding-dehydrogenation for hydrogenated SP700 titanium alloy four-layer hollow structure* Dr. Jinyuan Zhang	*Microstructure and mechanical properties of additively built 410L/304L bimetal structure* Ziqiang Mao
17:00~17:15	*Fatigue performance of flareless fittings under bolt tightening torque* Hezhe Huang	*Mechanical behavior and microstructural evolution of 304L stainless steel under wide temperature range* Xinran Xiong
17:15~17:30	*Fabrication of closed-end structures in hollow shafts through rotary swaging–based embedded joining* Dr. Tiantai Tian	*Forming of titanium helical tubes with extremely small pitches: an numerical and experimental study* Zhenhua Xu
18:00~20:00	**Dinner**	

Guidelines for Presentations

Each Plenary Report is scheduled for 30 minutes.

Each Keynote Report is scheduled for 20 minutes.

Invited Reports and Regular Reports are allocated 15minutes.

All presentations will follow the program schedule strictly. Speakers are kindly requested to arrive at the session room in advance to prepare their presentations.

All speakers are kindly requested to bring their presentations on a USB flash drive and copy the files to the conference computer before the session begins to ensure a smooth presentation process.

There will be no separate Q&A time for this conference. If there are any questions, you can be raised after the report ends.

Please rest assured that all files will be deleted after the presentation, and your files will not be sent to others.

Poster Presentations

Fast gas forming with in-die quenching of TA18 titanium alloy
Wentao Chen, Kexin Dang, Kehuan Wang, Gang Liu

Study on the peeling performance of Ti60 titanium alloy diffusion bonding joints
Yong Wu, Junjie Zhang, Laishui Zhou

Research on the Composite Forming Process of Metal Double-Layer Tubes
Chi Zhang, Yong Xu, Shihong Zhang

Research on Hot Roll Bending Forming Process for Ultra-High Strength Steel Variable Strength Tube
Zihan Liang, Tianmiao Qi, Chengxi Lei

Robust Design Optimization of Die Addendum Geometry to Ensure Formability of an Ultra-High-Strength Steel Cross-Member
Junhyuk Son, Daeyong Kim

Numerical Investigation of the Effect of Tube Position on the Electromagnetic Collision between Copper and Stainless Steel Tubes
Hyeonil Park, Daeyong Kim

Defect mechanism and thickness variation due to multi-axis hydro-bending in small-radius thin-walled tube
Huabo Zhou, Kang Yang, Yuxiao Chen, Wei Liu, Shijian Yuan

Predictive Performance of Various Yield Criteria for the Yielding Behaviour of Stainless-Steel/Aluminium-Alloy Double-Layer Y-Shaped Tubes
Feng Yingying, Geng Shuo, Chen Guopeng, Wang Junyang, Luo Zongan

Regulation of Thermal Residual Stress and Mechanical Properties in SiCf/TC17 Composites
Zhang Lingyu, Huang Hao, Gao Shaoqing, He Ji, Li Shuhui, Li Yongbing,
Fu Mingwang

Conference Venue & Accommodation

Shanghai Ship Hotel (上海大船酒店)

Address: No. 4988, Hangnan Road, Fengxian Tel: +86 (0)21 33650888

Standard - Room （高级房） 480 RMB includes breakfast

Deluxe - Room （豪华房） 580 RMB includes breakfast

Technical Visit

May 18, 2026 (Mon.)

TUBEHYDRO 2026 conference has set up several technical visit venues, but due to transportation and time limitations, multiple venues cannot be visited simultaneously. Please select the venue you plan to visit for the conference organizing committee to compile statistics by scanning the QR code.

(1) COMAC Shanghai Aircraft Manufacturing Co., Ltd.
(2) ZwickRoell China Experience Center and DOM Optical Experience Center

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+86 15645877201 (Huabo Zhou, Registration and Check-in)

ICTP 2026

The International Conference on the Technology of Plasticity 2026

Oct.11-16, 2026, The Jeju Shinhwa World, Jeju island, Republic of Korea

https://ictp2026.com/

Welcome to join Mini-Symposia-15:

Advances in Tube Forming Theories and Processes

Hosted by：

Gang Liu (China), Takashi Kuboki (Japan), Yannis Korkolis (Germany), Wei Liu (China)

Tube forming technologies play a critical role in addressing global challenges such as climate change and the transition to a sustainable society. To reduce CO_2 emissions, the lightweighting of vehicles, aircraft, and other modes of transportation is becoming increasingly important. Tubes offer structural advantages due to their high strength and rigidity relative to their weight, making them an ideal choice for manufacturing lightweight components. Furthermore, tube forming is essential for emerging energy solutions. In carbon capture and hydrogen transport, tubes must be capable of withstanding high pressures to ensure safe and reliable operation. Next-generation nuclear reactors, such as small modular reactors, require complex-shaped tubes that can endure both high pressure and high temperature. At the same time, there is a growing demand for precision miniature tubes used in medical devices. Therefore, tube forming technology is expected to remain a key research topic for the foreseeable future. This symposium aims to bring together researchers and experts to discuss innovative theories and processes for producing lighter, more complex, more precise, and higher-performance tubular components, contributing to a more sustainable and advanced society.

Important Dates:

Early Registration (extended) …….. May 31, 2026
Abstract for Presentation Only** ……..……..…… July 31, 2026
Regular Registration …… …… July 31, 2026
Hotel Reservation …… July 31, 2026

Tube Hydroforming Technology 2026