Invitation & Final Program

The 9th Asian Symposium on Precision Forging

ASPF 2005

October 02~05, 2005
Splendor Kaohsiung Hotel
Kaohsiung, Taiwan

◆ Organized by

Taiwan Forging Association (TwFA) &
National Cheng Kung University (NCKU)

◆ Co-organized by

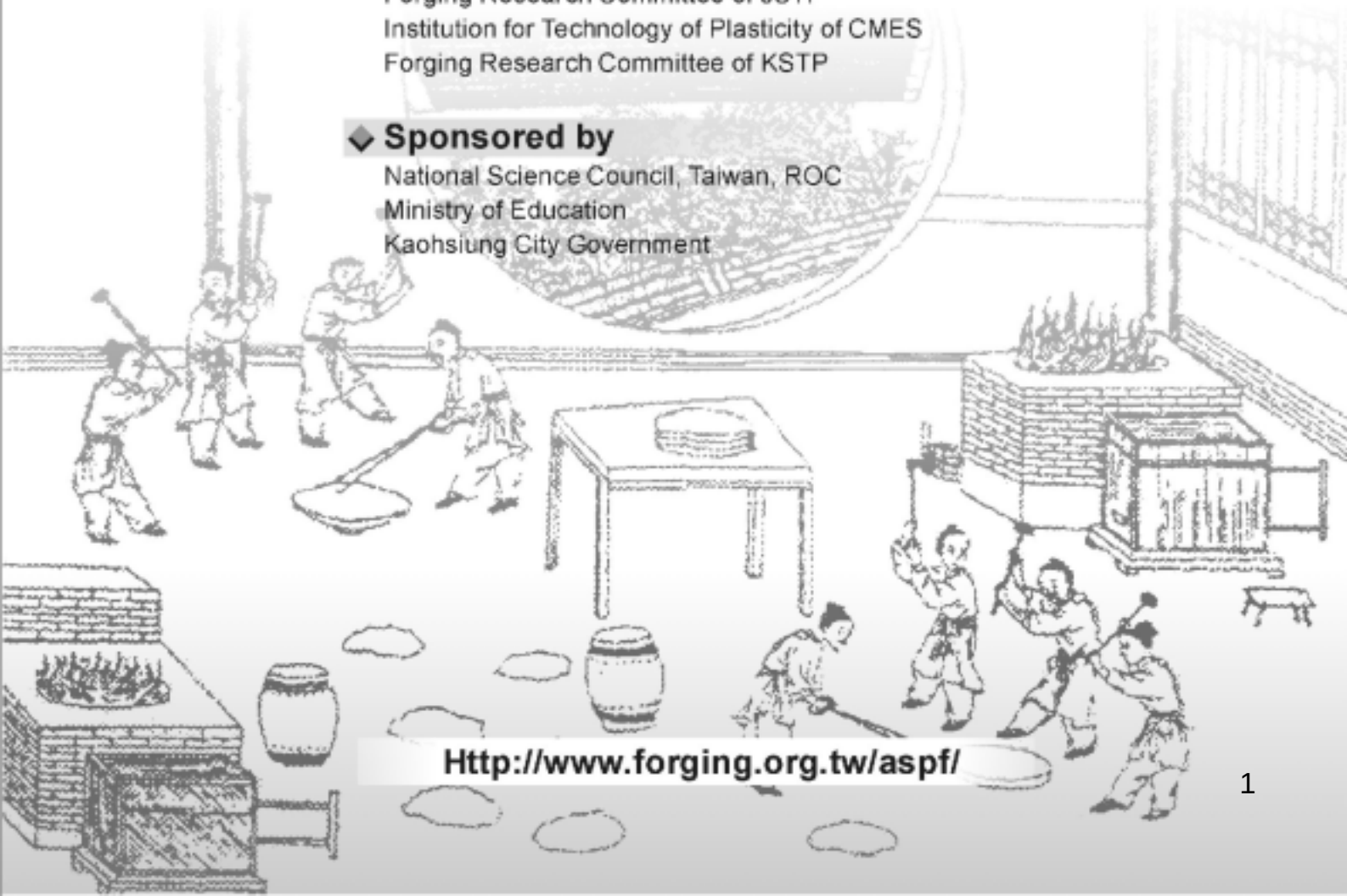
Metal Industries Research and Development Centre (MIRDC)
National Kaohsiung University of Applied Sciences

◆ Incorporation with

Forging Research Committee of JSTP
Institution for Technology of Plasticity of CMES
Forging Research Committee of KSTP

◆ Sponsored by

National Science Council, Taiwan, ROC
Ministry of Education
Kaohsiung City Government



Http://www.forging.org.tw/aspf/

INVITATION

It is our pleasure to welcome you to join ASPF 2005, the 9th Asian Symposium on Precision Forging in Kaohsiung, Taiwan. National Cheng Kung University (NCKU) and Taiwan Forging Association (TwFA) are hosting this special event. The original symposium was held in 1985 in the name of Sino-Japan Precision Forging Seminar. It was at the 6th Symposium in Nagoya in 1998 that the international committee decided to enlarge the symposium to all Asian countries. Current ASPF 2005 is the third since the name of the symposium has been changed.

The aim of the symposium is to bring together the leaders from industry and research communities to solve problems that precision forging manufacturer are facing with global competition. The symposium will provide an opportunity for the leaders, researchers on precision forging manufacturing around the Asia to collaborate and share their views and experiences.

The theme of the 9th ASPF 2005 is "Innovative Forging Technology for Global Competition". Asian countries are playing more and more important roles in world forging production in this era of globalization. Technology innovation is the key to sustainability for this old forging technology.

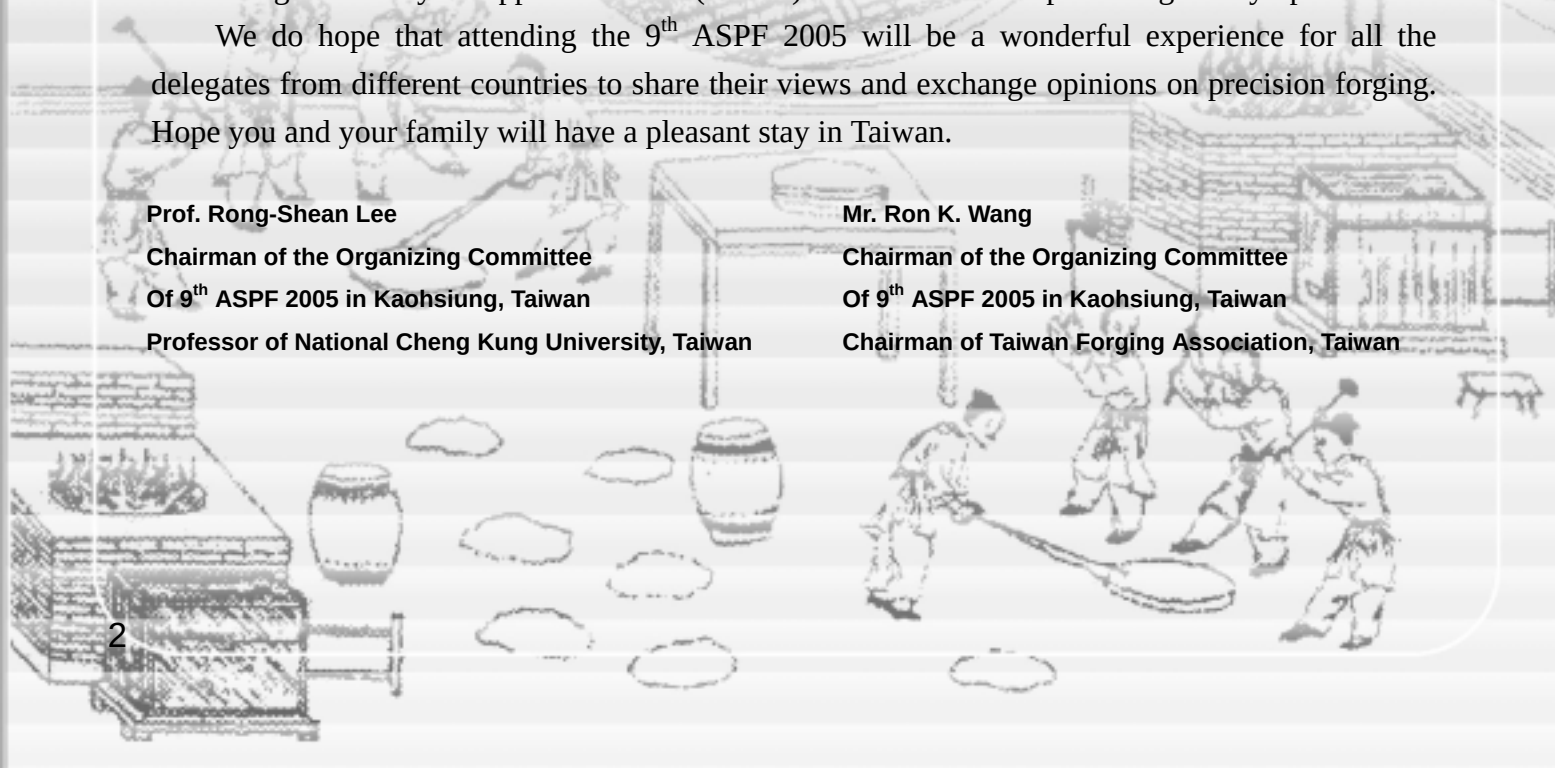
The proceedings will contain 48 papers from five Asian countries which have strong forging activities. In this symposium, we were honored to have five distinguished keynote speakers, Prof. John Fu, Prof. Tamotsu Nakamura, Prof. Yong-Taek Im, Prof. Zhu Weicheng, and Dr. Anil K. Gupta to share their inspiring achievements in precision forging of their countries. Apart from five keynote presentations, technical papers will be presented in four parallel sessions of six subjects.

We would like to express our sincere appreciation to the members of International Organizing Committee, Local Organization Committee, and Secretariat of the 9th ASPF 2005 for their effort to make the Symposium possible and successful. We are also thankful for the authors and members of Paper Review Committee who made fruitful contributions. Last but not least, we would like to express our heartful gratitude to National Science Council (NSC), Ministry of Education, Metal Industry Research and Development Centre (MIDRC), Kaohsiung City Government and National Kaohsiung University of Applied Science (KUAS) which have been sponsoring this symposium.

We do hope that attending the 9th ASPF 2005 will be a wonderful experience for all the delegates from different countries to share their views and exchange opinions on precision forging. Hope you and your family will have a pleasant stay in Taiwan.

Prof. Rong-Shean Lee
Chairman of the Organizing Committee
Of 9th ASPF 2005 in Kaohsiung, Taiwan
Professor of National Cheng Kung University, Taiwan

Mr. Ron K. Wang
Chairman of the Organizing Committee
Of 9th ASPF 2005 in Kaohsiung, Taiwan
Chairman of Taiwan Forging Association, Taiwan



Chairman:

Prof. Rong-Shean Lee	Ron K. Wang
National Cheng Kung University, Taiwan Tel: +886-6-2757575#62147 mersl@mail.ncku.edu.tw	Chairman, Taiwan Forging Association, Taiwan Tel:+886-7-352-1308 cfa@forging.org.tw

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Prof. John Fu (National Kaohsiung First University of Science and Technology, Taiwan)

Co-Chairman:

Prof. W. S. Huang (Metal Industry Research and Development Centre, Taiwan)

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Prof. Yong Taek Im (KAIST, Korea)
Prof. Takashi Ishikawa (Nagoya Univ, Japan)
Dr. Kyoung Hoan Na (KITECH, Korea)
Prof. Tamotsu Nakamura (Shizuoka Univ., Japan)
Prof. Kozo Osakada (Osaka Univ., Japan)
Prof. Hideo Sekiguchi (Nara Nat'l College of Tech., Japan)
Dr. Kichitaro Shinozaki (Japan)
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Prof. Dong Yol Yang (KAIST, Korea)
Zhang Qian Sheng(Institution for Technology of Plasticity ,CMES, China)
Zhu Weicheng (First Automotive, China)

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Dr. H. R. Lin (China Steel Corporation, Taiwan)
Wen S. Lin (Metal Industries Research and Development Centre, Taiwan)
Prof. Gow-Yi Tzou (Yung Ta Institute of Technology & Commerce, Taiwan)
Asso. Prof. Y.S.Ouyang (National Taiwan University ,Taiwan)
Assi. Prof. Jin Bin Yang (National Kaohsiung First University of Science and Technology, Taiwan)

SYMPOSIUM SCHEDULE

October 02, 2005 (Sunday)

15:00-18:00 Registration
18:00-21:00 Welcome Reception

October 03, 2005 (Monday)

08:00-03:30 Registration
08:30-08:50 Greeting
08:50-09:10 Special Speech
09:10-09:40 Keynote Speech (I): Prof. John Fu
09:40-10:10 Keynote Speech (II) Prof. Tamotsu Nakamura
10:10-10:30 Coffee Break
10:30-11:00 Keynote Speech (III) Prof. Yong-Taek Im
11:00-11:30 Keynote Speech (IV) Dr. Zhu Weicheng
11:30-12:00 Keynote Speech (V) Dr.Anil K. Gupta
13:30-15:30 Session I: Cold, Warm, Hot Forging Session II: Materials Characteristics
Session III:CAD/CAE/CAM Session V:Micro-forming
15:30-16:00 Coffee Break
16:00-18:00 Session I: Cold, Warm, Hot Forging Session III CAD/CAE/CAM
Session IV: Development of Emergent Technologies Session VI: Others
18:40-20:30 Banquet

October 04, 2005 (Tuesday) Technical Tour

07:30- Departure
07:30-09:30 Transfer.
09:30-12:00 Sightseeing.
12:30-14:00 Lunch and Transfer
14:00-17:30 Visit to Chin Fong Machine Industrial Co., Ltd.
17:30-19:30 Dinner
19:30-21:30 Transfer
21:30- Arriving at Hotel

October 05, 2005 (Wednesday) Technical Tour

09:30- Departure
09:30-10:00 Transfer.
10:00-11:30 Visit to China Steel Corporation
11:30-13:00 Lunch
13:00-13:30 Transfer
13:30-15:00 Visit to Metal Industries Research & Development Cnetre.
15:00-18:00 Sightseeing
18:00-20:00 Farewell Party

TECHNICAL PROGRAM

Date/Time			Contents
10/2 (Sun) 42F	15:00	18:00	**Registration**
	18:30	21:00	**Welcome reception (Splendor Hotel)** **Room: AMBER**
10/3 (Mon)	08:00	08:30	**Registration**
	08:30	08:50	**Opening Address** **Room: DIAMOND(I)** *Ron K. Wang, Rong Shean Lee*
	08:50	09:10	**Special speech** *Weng-Sing Hwang*
	09:10	09:40	**Keynote Speech (Ⅰ)** ***Chair: W.S. Hwang*** **The Future Prospect of Precision Forging Technology in Taiwan** *Prof. John Fu, Taiwan*
41F	09:40	10:10	**Keynote Speech (Ⅱ)** ***Chair: Su-Hai Hsiang*** **Research and Development on Precision Forging Technology in Japan** *Prof. Tamotsu Nakamura, Japan*
	10:10	10:30	**Break**
	10:30	11:00	**Keynote Speech (Ⅲ)** ***Chair: Fuh-Kuo Chen*** **Recent Development on Three Dimensional Forging Simulations and Industrial Applications** *Prof. Yong-Taek Im, Korea*
	11:00	11:30	**Keynote Speech (Ⅳ)** ***Chair: John Fu*** **The Precision Forging in the FAW** *Prof. Zhu Weicheng, China*
	11:30	12:00	**Keynote Speech (Ⅴ)** ***Chair: You Min Huang*** **Current Status of Forging Industry in India with Special Reference to Development of Cold/Warm Forged Components at NPL** *Dr. Anil K. Gupta*
	12:00	13:30	**Lunch**

Subject(I): Cold, Warm and Hot Forging (including extrusion and upsetting) technology as well as equipment, die and mold, materials, lubrication and related technology.

Chair: Fuh-Kuo Chen, Zhu Weicheng

Room:CORAL (42F)

10/3 (Mon)	13:30	13:50	**A Forging Preform Design Using Abductive Network and FEM** *Chin-Tarn Kwan, Feng-Chih Lin*
	13:50	14:10	**The Influence of Punch Motion on the Equal-cross Section Lateral Extrusion** *Yuan-Chuan Hsu, Yu-Luen Lin*
	14:10	14:30	**Forging Process Development for Titanium Wrench** *Robert S. Hwang, Jin-Long Jou, Yu-Rui Chen*
42F	14:30	14:50	**The Precision Cold Forging of the Strip Material in the Progressive Die Process** *S.G Tsai, C.F. Wu, C.W. Tai*
	14:50	15:10	**Investigation of Estimating Tool Life in Hot Forging** *Hiroyuki Saiki, Yasuo Marumo, Astushi Shinkai, Akihiro Minami, Liqun Ruan*
	15:10	15:30	**Evaluation of Tool Temperature in Hot Forging** *Hiroyuki Saiki, Akihiro Minami, Yasuo Marumo, Liqun Ruan*

Subject(I): Cold, Warm and Hot Forging (including extrusion and upsetting) technology as well as equipment, die and mold, materials, lubrication and related technology.

Chair: John Fu, Su-Hai Hsiang

Room:CORAL (42F)

10/3 (Mon)	**16:00**	**16:20**	**Computer Aided Precision Forging Die and Process Design of a DOJ Part** *Jinn-Jong Sheu*
	16:20	**16:40**	**An Investigation of Unequal Interface Friction Conditions During the Upsetting Process of Ellipsoid** *S. Y. Lin, C . M. Chang*
42F	**16:40**	**17:00**	**Computer-Aided Die Design for the Hot Forging of an Automobile Generator Component** *Chia-Wei Lin, Yi-Sheng Cheng, Fuh-Kuo Chen*
	17:00	**17:20**	**Tool Life and Productivity in Cold Forging** *Young-Seen Lee, Yong-Nam Kwon, Ji-Hoom Kim, Sak-Tak Choi, Jung-Huan Lee*
	17:20	**17:40**	**Extrusion of Magnesium Alloy Sheets under Multi-Speed Method** *Su-Hai Hsiang, Yi-Wei Li,n Jer-Liang Kuo*
	17:40	**18:00**	**A Study of Unbalanced Magnetron Sputtering CnAIC Layer on Tool Steel for Improving the Tool Life** *John Fu, Guo-Wei Li*

Subject(II): Materials characteristics including Ferrous and Light metals (Titanium, Magnesium, Aluminum).

Chair :Anil K. Gupta, Rong-Shean Lee

Room:AMBER (42F)

10/3 (Mon)	**13:30**	**13:50**	**Cross-cylinder Wear Test of Hard-coated High Speed Tool Steel** *Kazuhiko Kitamura, Takaji Mizuno, Naohide Yotani,Mie Hattori*
	13:50	**14:10**	**Bauschinger Effect in Non-Heat Treated Cold Forging Steel** *Yong-Nam Kwon, Young-Seon Lee, Jung-Hwan Lee*
	14:10	**14:30**	**Evaluation of Flow Stresses of Carbon Steel Tubes by Bulge Test** *Yeong-Maw Hwang, Bing-Jian Chen, Yi-Kai Lin*
42F	**14:30**	**14:50**	**Utilizing Notch Designs on Upsetting Test for Improving Forgeability Evaluation Capability** *Rong-Shean Lee, Yen-Ju Chen, Shui-To Wang*
	14:50	**15:10**	**Strain Measurement Utilizing Micro-indentation in Upset Forgeability Evaluation** *Shui-To Wang, Rong-Shean Lee*
	15:10	**15:30**	**The Effect of Forging Conditions on Metallography of Ti-6Al-4V ELI Forgings for Medical Use** *Anderven Wang, Robert S. Hwang, Jin-Long Jou*

Subject(III): CAD/CAE/CAM and Simulation Technology.

Chair: Yong Taek Im, You-Min Huang

Room:PEARL (42F)

10/3 (Mon)	**13:30**	**13:50**	**An Investigation of Void Defect in Rod Extrusion** *Dyi-Cheng Chen*
42F	**13:50**	**14:10**	**Study on Rotating Compression Forming of Ring Based on the Finite Element Method and Experiment** *Hung-Hsiou Hsu, Gow-Yi Tzou, Wen-Tung Chien,Wen-Hsin Tseng*

10/3 (Mon)	14:10	14:30	**FE Simulation of Grain Size and Temperature Rise During the Forging of a Commercial TC6 Titanium Alloy Disc** *M.Q.Li, A. M. Xiong, X. L. Li*
42F	14:30	14:50	**Numerical Simulation of the Cold Precision Forging Process of Spur Gear and the Influence of Technological Parameters on Spring-back** *Shun-Lai Zang, Yu Cheng, Cheng Guo*
	14:50	15:10	**Three-Dimensional Numerical Simulation of Near Net Shape Roll Forging of Long Nonsymmetrically Profiled Axel Workpiece** *Jiang Peng, Cao Fei, Hu Furong, Zhang Hao, Qian Haochen*
	15:10	15:30	**Generalized Calculation Program for Cold Extrusion Pressure** *Kichitaro Shinozaki, Takahiro ohashi, Toru Simizu, Kan-ichi Harsu Kano*
	15:30	16:00	Coffee Break

Subject(III):CAD/CAE/CAM and Simulation Technology.
Chair: Takashi Ishikawa, Jong-Taek Yeom
Room:PEARL (42F)

10/3 (Mon)	16:00	16:20	**3D-FE Analysis of Shearing of Round Bar with Axial Compression** *Takashi Ishikawa, Yoshinori Yoshida, Nobuki Yukawa, Takahiro Banjo, Masahiko Amari, Yukihiko Tanase*
	16:20	16:40	**High Quality Adaptive Mesh Generation for Three-dimensional Metal Forming Simulations** *M. C. Lee, M. S. Joun*
42F	16:40	17:00	**FE Simulation of Microstructure Evolution During Direct Age Process of Alloy 718** *Jong-Taek Yeom, Chong-Soo Lee, Chil-Yong Eum, Jeoung-Han kim, Nho-Kwang Park*
	17:00	17:20	**Investigation of Upsetting With Curved Dies Through Analytical and Numerical Methods** *S. Y. Lin, T. S. Yang*
	17:20	17:40	**A Finite Element Analysis for the Forging Of Spur Gear** *Tung-Sheng Yang*

Subject(IV): Development of emerging Forging technology such as Combined Forging and Stamping processes.
Chair: Chao-Cheng Chang
Room:AMBER (42F)

10/3 (Mon)	16:00	16:20	**Development of Plastic Joining Method Using Indentation** *S. Hanami, K Osakada, R. Matsumoto, H. Yoshimura*
	16:20	16:40	**A Study on The Precision Powder Forging Process of the Slide Block in Car Air Compressor.** *Jin -Bin Yang, Wen-Yom Wan, Tseng-Jen Cheng*
42F	16:40	17:00	**Hole Flanging with Multi-action Extrusion** *Heng-Sheng Lin, Chia-Hung Wu*
	17:00	17:20	**Study on an Integrated Process for Screw Rolling Die Plate Development** *Hsin-Yu Cheng, Yung-Chou Kao*
	17:20	17:40	**High Aspect Ratio Piercing of Magnesium Alloy AZ31B Using Double Axis Servo-Press** *Ryo Matsumoto, Tomoo Kubo, Kozo Osakada*

Subject(V): Micro-forming and Thread Forming.
Chair: Yung-Chou Kao, Yew Shing Ouyong
Room:AGATE (42F)

10/3 (Mon)	**13:30**	**13:50**	**The Development of the Micropart with Multi-Stage Cold Forging Technology** *Yi-An Chen, Hsing-Chih Tsai, Chuen-Fuu Wu*
	13:50	**14:10**	**Studies on Micro-Forming of CuNi and ZnAl Alloys** *Quang-Cherng Hsu, Chen-Oa Wu, Ko-Ho Yang Rong-Shean Lee*
	14:10	**14:30**	**The Effects of Microstructure In Micro-Metal Forming on CuZn15 Alloy** *Ming-Chin Tsai, Chih-Hao Lin, Chuen-Fuu Wu*
42F	**14:30**	**14:50**	**The Effect of Forming Speed on Micro-Punched Gears** *Chao-Cheng Chang, Yi-Hsien Wu*
	14:50	**15:10**	**Contact Friction Modeling for Precision Dry Rolling: A Unified Solution Prospect.** *Yew Shing Ouyang*
	15:10	**15:30**	**3-D Finite Element Simulation for Flat-Die Thread Rolling of Stainless Steel** *Rong-Shean Lee, Chi-Hang Chen Shui-To Wang*

Subject(VI): Others.
Chair: Tamotsu Nakamura, Quang-Cherng Hsu
Room:AGATE (42F)

10/3 (Mon)	**16:00**	**16:20**	**Detection of Damage to and Fracture of Forging Tool in Operation Using Fractal Property of Acoustic Emission** *Kunio Hayakawa, Tamotsu Nakamura*
	16:20	**16:40**	**General Solutions of the Bond Rolling of Unbounded Sandwich Sheet With Outer Soft and Inner Hard Layers** *Ming-Nan Huang, Gow-Yi Tzou, Hung-Ying Hsu, Chien-Fu Liu, Kuo-Chiang Liang*
42F	**16:40**	**17:00**	**Critical Safety Device for Forging Machinery by Image Processing Technology** *Quang-Cherng Hsu, Jinn-Jong Sheu, Jin-Suen Yang*
	17:00	**17:20**	**The study of high speed turning of the harden mold steel by CBN cutting tools** *Wei-shin Lin, Tun-Hao Liang, Po-Chun Huang, Tzu-Lun Huang, Hsin-Hsien Wu*
	17:20	**17:40**	**Study on the Tail Overfill Defect of AISI 1022 Coil Rolling Process /** *H.Y. Chen, J.H. Tsai, Y.F. Lin, Yung-Chou Kao*
	17:40	**18:00**	**The Analysis Modeling of Machinability of SKD61 Tool Steel in High Speed Milling** *Hsin Juan, Bean-Yin Lee, Wann-Yih Lin*
10/3 (Mon) 41F	**18:00**	**21:00**	**Banquet** **Room:Diamon(III)**

Registration

International Participants

Pre-registration	USD 350
On-site Registration	USD400

Domestic Participants

Regular	NTD 6,000
Student	NTD 2,500

(Registration fee does not include both breakfast and accommodation fees.)

Accommodation

Hotel: Splendor Kaohsiung Hotel **(Check in counter: 39F)**

Add: 39F, No.1, Tzu-Chiang 3rd Road Kaohsiung, Taiwan

Rate (a day):

Single room: NTD3,180 (Approx USD100)

Twin NTD3,520 (Approx USD110)

The accommodation fees include breakfast.

Map of TheSplendor Kaohsiung Hotel

Splendor Kaohsiung Hotel

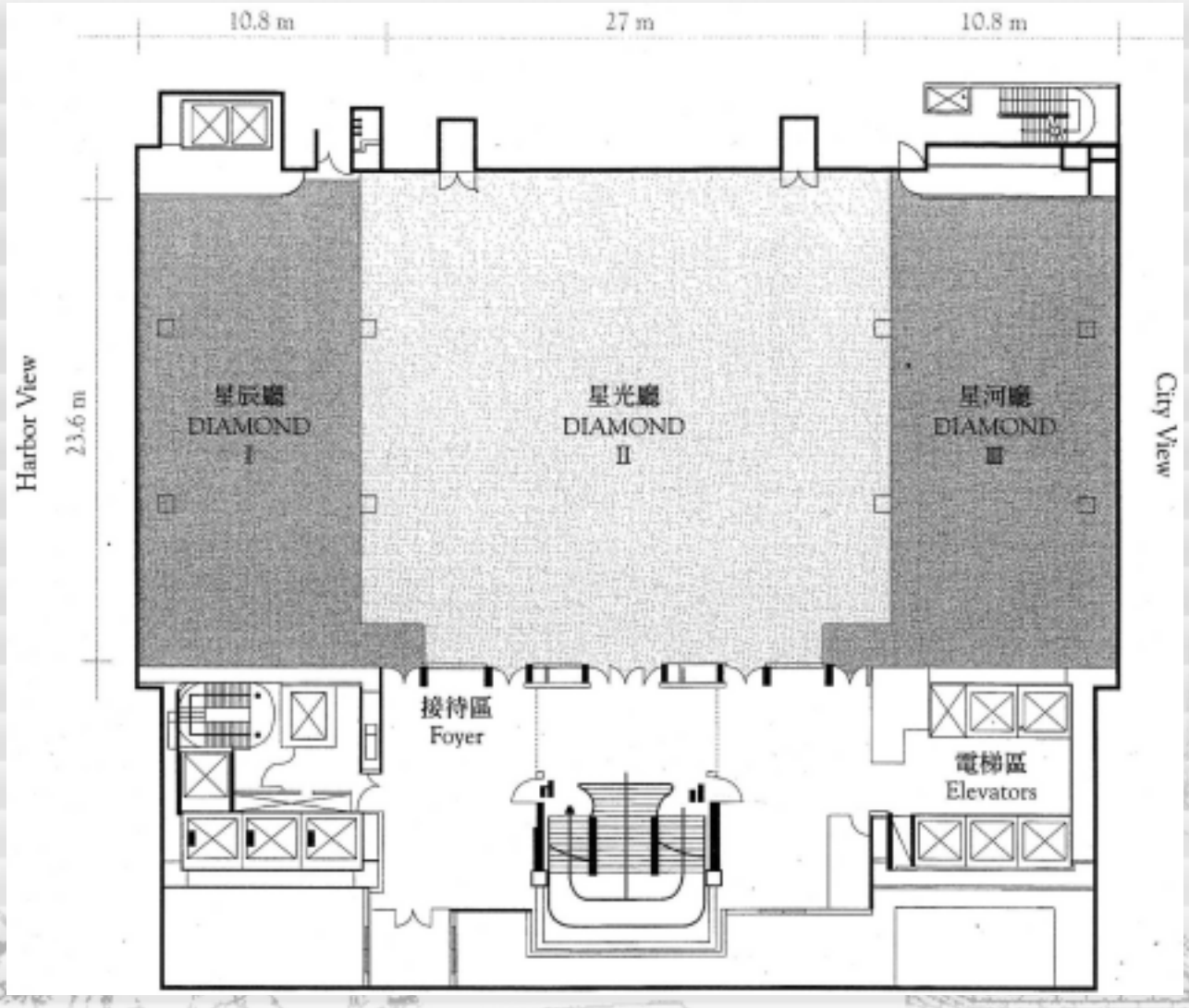
Add: 42F, No.1, Tzu-Chiang 3rd Road Kaohsiung, Taiwan

Tel:+886-7-566-8000

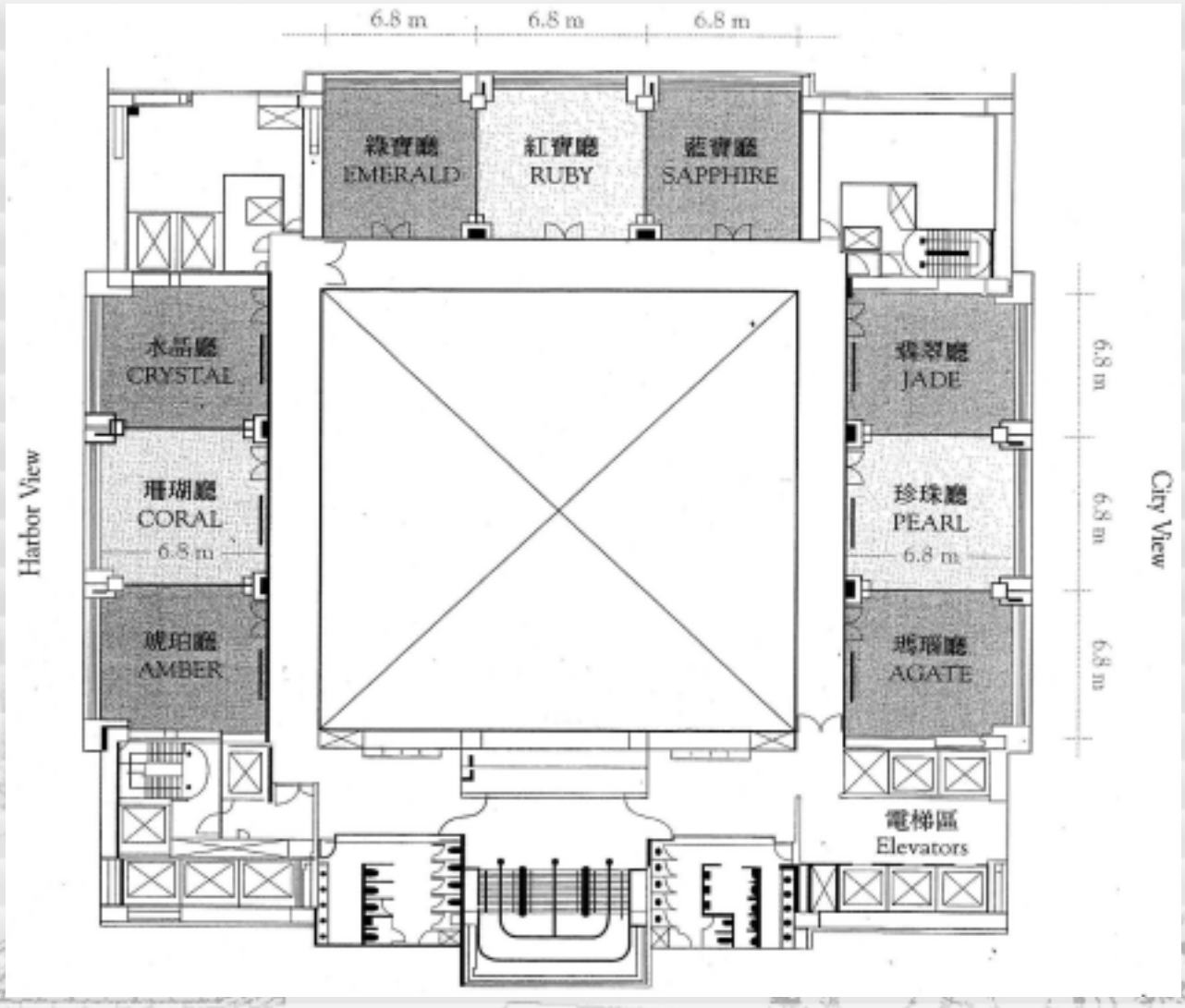
Fax:+886-7-566-8300

http://www.thesplendor.com

41F Floor Plan



42F Floor Plan



ASPF 2005 Secretariat

Taiwan Forging Association
Tel: +886-7-352-1308／Fax: +886-7-353-3138
E-mail: cfa@forging.org.tw
http://www.forging.org.tw/aspf/