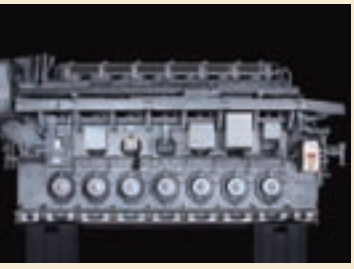



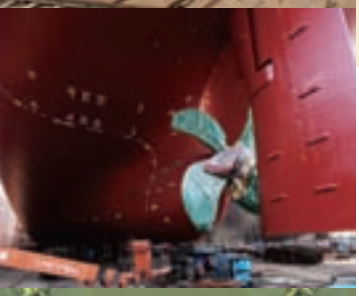
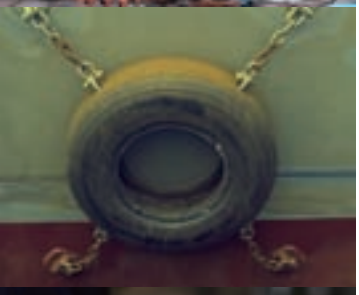


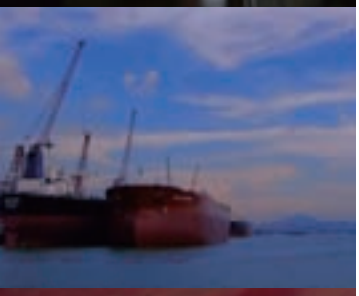


CIMAC Congress 13
Shanghai
MAY 13th - 16th, 2013

27th CIMAC World Congress
on Combustion Engine Technology
for Ship Propulsion
Power Generation
Rail Traction

FINAL PROGRAMME




Congress Shanghai 13

Contents

With this QR-Code (using your smartphone scanner)
you can directly get to the Congress Technical Programme at
www.cimaccongress.com
- optimized for smart phones.

Welcome Message

The Chinese Society for Internal Combustion Engines, as the National Member of CIMAC, has the pleasure of organizing the 27th CIMAC World Congress on Combustion Engines, scheduled for 13th – 16th May 2013 in Shanghai, China.

CIMAC is a vigorous and attractive organization, which brings together manufacturers, users, suppliers, oil companies, classification societies and scientists in the field of engine. With more than 60 years of diligent, effective and valuable work, CIMAC has become one of the major forums in which engine builders and users can consult with each other and share concerns and ideas.

The Congress will be devoted to the presentation of papers in the fields of marine, power generation and locomotive engine research and development covering state-of-the art technologies as well as the application of such engines. Moreover, the event will provide the unique opportunity to meet colleagues and customers from the industry around the world.

Located in the Yangtze River Delta and situated by the East China Sea, Shanghai is the biggest industrial and commercial city in China and also a famous international metropolis. Shanghai showing its own unique makings, ancient and modern, Eastern and Western, and traditional and fashionable, attracts more than 8 million visitors from all around the world every year. Shanghai is very easy to reach with thousands of flights in its two international airports every day, which connect more than 200 cities in the world. In fact, Shanghai hosts hundreds of international Exhibitions per year.

The Congress will be held at Shanghai Exhibition Center located in the heart of downtown, a perfect venue for conference, exhibition and large-scale event. A well developed transportation system in the city ensures you a convenient way to explore the fantastic and unusual places at your leisure.

With 193 papers to be published during 48 presentation sessions, 68 papers to be presented in three poster sessions and an exhibition with 82 exhibitors, covering an area of 2642 net sqm. to be held simultaneously during the Congress, all the numbers will reach new records high.

The 2013 Organizing Committee sincerely invites you to the 27th CIMAC World Congress on Combustion Engine Technology and we are looking forward to meeting you in Shanghai.

Donghan JIN
President of the 27th CIMAC World Congress

Welcome Message

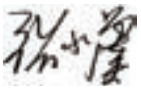
Confucius once said, "It is such a delight to have friends coming from afar!". The spring breeze brings warmth; flowers compete in splendor in May. In this beautiful season, Shanghai is ready to have the grand opening of the 27th CIMAC World Congress on Combustion Engine Technology and meets colleagues and customers from combustion engine industry around the world. As the president of Chinese Society for Internal Combustion Engines, I have great honor to take this opportunity to sincerely welcome you to Shanghai.

China has become the world's largest Internal Combustion Engine manufacturing country in recent years. The total annual production of internal combustion engines in 2011 is 77 million units, or 1.4 billion KW, which basically meet the needs of automobile, construction machinery, rail traction, marine, power generation equipment and large agricultural machinery etc.. In the future, China will become a strong combustion engine manufacturing country with multiple funds, different level products, advanced leading technology and manufacturing equipment as well as modern management. At the same time, it will be the largest market for combustion engines in the world. The 27th CIMAC World Congress will provide a good platform for technical cooperation and exchange.

Chinese Society for Internal Combustion Engines (CSICE) is a non-profit corporate social organization. It is a National Member Association (NMA) of CIMAC. It has ten sub-societies with over 15,000 members. Every year, CSICE holds dozens of academic activities and seminars with over 2,000 attendees. In addition, CSICE has been publishing three academic journals, with an annual average publication of more than 300 papers and total issue of over 35,000 copies. Those activities have made great contribution to the development of the China combustion engine industry.

I fully believe that experts, scholars, technicians and engineers from the combustion engine industry all over the world will get together in Shanghai to join in the 27th CIMAC World Congress and its Exhibition to discuss and exchange technologies on the issues of common concern in the world today, display state of the art products and technologies, which will make active contribution to the development of the world combustion engine industry.

I wish the 27th CIMAC World Congress and its Exhibition a great success!



Xiaoyu ZHANG
President of Chinese Society for Internal Combustion Engines

Introduction to CIMAC

What CIMAC is:

CIMAC is a worldwide non-profit association consisting of National Member Associations, National Member Groups and Corporate Members in 26 countries in America, Asia and Europe.

It brings together manufacturers of diesel and gas engines and gas turbines, users such as shipowners, utilities and rail operators and also suppliers, oil companies, classification societies and scientists.

The mission of CIMAC:

- Promote exchange of scientific and technical information via its Congresses and CIMAC Circles
- Improve understanding between engine manufacturers and users
- Improve understanding between manufacturers and suppliers
- Promote Working Group activities
- Focus upon and promote the work and activities of National Member Associations
- Issue publications and support work in the area of standardisation
- Collaborate with other International Associations
- Inform regularly about CIMAC activities

CIMAC Working Groups:

All CIMAC Working Groups are established to find solutions to technical problems and to publish Recommendations as well as press articles worldwide.

CIMAC Working Groups are presently active in the following areas:

- Exhaust Emissions
- Fuels and Lubricants
- Users
- Engine Specification
- Classification

CIMAC Structure:

The CIMAC Congress represents the culmination point of all CIMAC activities and takes place every 3 years each time in a different member country.

CIMAC Executive Board	President Past President Vice President Technical Programme Vice President Technical Programme Vice President Working Groups Vice President Users Vice President Communication Secretary General	**Yasuhiro Itoh,** *Niigata Power Systems Co., Ltd.* **Karl Wojik,** *AVL List GmbH* **Christoph Teetz,** *MTU Friedrichshafen* **Patrick Frigge,** *Wärtsilä Corporation* **Christian Poensgen,** *MAN Diesel & Turbo SE* **Oyvind Toft,** *BW Fleet Management AS* **Axel Kettmann,** *ABB Turbo Systems* **Markus Heseding,** *CIMAC/VDMA*
Organizing Committee of the 27th CIMAC Congress	Congress President President of the Organizing Committee Chairmen of Technical Committee Chairman of Operation Committee Head of Finance Committee	**Donghan Jin,** *Shanghai Marine Diesel Engine Research Institute* **Xiaoyu Zhang,** *Chinese Society for Internal Combustion Engines (CSICE)* **Christoph Teetz,** *MTU Friedrichshafen* **Patrick Frigge,** *Wärtsilä Corporation* **Shuyi Yang,** *Chinese Society for Internal Combustion Engines (CSICE)* **Xiaobin Li,** *Shanghai Internal Combustion Engine Research Institute*

Time Schedule Overview

Sunday, 12th May, 2013

14:00 - 16:30	Registration	1st Floor of Hall E1, Enter from Gate 2, Shanghai Exhibition Center (SEC)

Monday, 13th May, 2013

Time	Activities	Venue	Remarks
08:00 - 12:00	Registration	1st Floor of Hall E1	Refer to page 11 for location
09:30 - 11:00	Opening Ceremony	Central Hall	
11:00 - 12:00	Visit Exhibition	1st Floor of Hall E1, W1 2nd Floor of Hall E1, W1	
12:00 - 13:00	Lunch	Central Hall	2 normal choices, 1 for vegetarian, 1 for Muslim
13:30 - 15:00	Technical Sessions	2nd Floor of Hall E1, W1 Room A, B, C, D	
15:00 - 15:30	Coffee break	1st Floor of Hall E1, W1	Refer to page 10 & 11 for location
15:30 - 17:00	Technical Sessions	2nd Floor of Hall E1, W1 Room A, B, C, D	
17:00	End of Technical Sessions for Monday		
18:00 - 21:00	Welcome Reception	JC Mandarin Banquet Hall	Access by invitation only

Tuesday, 14th May, 2013

Time	Activities	Venue	Remarks
08:30 - 10:00	Technical Sessions	2nd Floor of Hall E1, W1 Room A, B, C, D	
10:00 - 10:30	Coffee break	Exhibition Floor 1st Floor of Hall E1, W1	Refer to page 10 & 11 for location
10:30 - 12:00	Technical Sessions	2nd Floor of Hall E1, W1 Room A, B, C, D	
12:00 - 13:00	Lunch	Central Hall	2 normal choices, 1 for vegetarian, 1 for Muslim
13:30 - 15:00	Technical Sessions	2nd Floor of Hall E1, W1 Room A, B, C, D	
15:00 - 15:30	Coffee break	1st Floor of Hall E1, W1	Refer to page 10 & 11 for location
15:30 - 17:00	Technical Sessions	2nd Floor of Hall E1, W1 Room A, B, C, D	
10:00 - 16:00	Poster Session	2nd Floor of Hall E1, W1 Poster Session 1, 2	
17:00	End of Technical Sessions for Tuesday		
18:30 - 21:00	ABB Evening		Refer to Invitation for Departure points
10:00 - 16:00	Optional Tour	Ancient Town, Zhujiajiao	Departure from Fountain Square

Note: Please remember wearing your badge all the time.

Time Schedule Overview

Wednesday, 15th May, 2013

Time	Activities	Venue	Remarks
08:30 - 10:00	Technical Sessions	2nd Floor of Hall E1, W1 Room A, B, C, D	
10:00 - 10:30	Coffee break	1st Floor of Hall E1, W1	Refer to page 10 & 11 for location
10:30 - 12:00	Technical Sessions	2nd Floor of Hall E1, W1 Room A, B, C, D	
12:00 - 13:00	Lunch	Central Hall	2 normal choices, 1 for vegetarian, 1 for Muslim
13:30 - 15:00	Technical Sessions	2nd Floor of Hall E1, W1 Room A, B, C, D	
15:00 - 15:30	Coffee break	1st Floor of Hall E1, W1	Refer to page 10 & 11 for location
15:30 - 17:00	Technical Sessions	2nd Floor of Hall E1, W1 Room A, B, C, D	
10:00 - 16:00	Poster Session	2nd Floor of Hall E1, W1 Poster Session 1, 2	
17:00	End of Technical Sessions for Wednesday		
10:00 - 16:00	Optional Tour	Yuyuan Garden	Departure from Fountain Square

Thursday, 16th May, 2013

Time	Activities	Venue	Remarks
08:30 - 10:00	Technical Sessions	2nd Floor of Hall E1, W1 Room A, B, C, D	
10:00 - 10:30	Coffee break	1st Floor of Hall E1, W1	Refer to page 10 & 11 for location
10:30 - 12:00	Technical Sessions	2nd Floor of Hall E1, W1 Room A, B, C, D	
12:00 - 13:00	Lunch	Central Hall	2 normal choices, 1 for vegetarian, 1 for Muslim
13:30 - 14:30	Special Collin Trust Lecture	Central Hall	
14:30 - 16:00	Final Panel Discussion	Central Hall	
10:00 - 16:00	Poster Session	2nd Floor of Hall E1, W1 Poster Session 1, 2	
16:00	End of Technical Sessions for Thursday		
18:30 - 21:00	Gala Dinner Party	Seagull Restaurant	Departure from 4 hotels at 17:00, Details on invitation

Friday, 17th May, 2013

08:30 - 16:30	Technical Tours (3 different lines) Departure from JC Mandarin Hotel

Conference Venue

The Congress will be held in Shanghai Exhibition Center (SEC) which was established in 1955. SEC is the first ever site for conference and exhibition in Shanghai. Over the past four decades or so, SEC has been the venue for quite a number of important political events and foreign affairs.

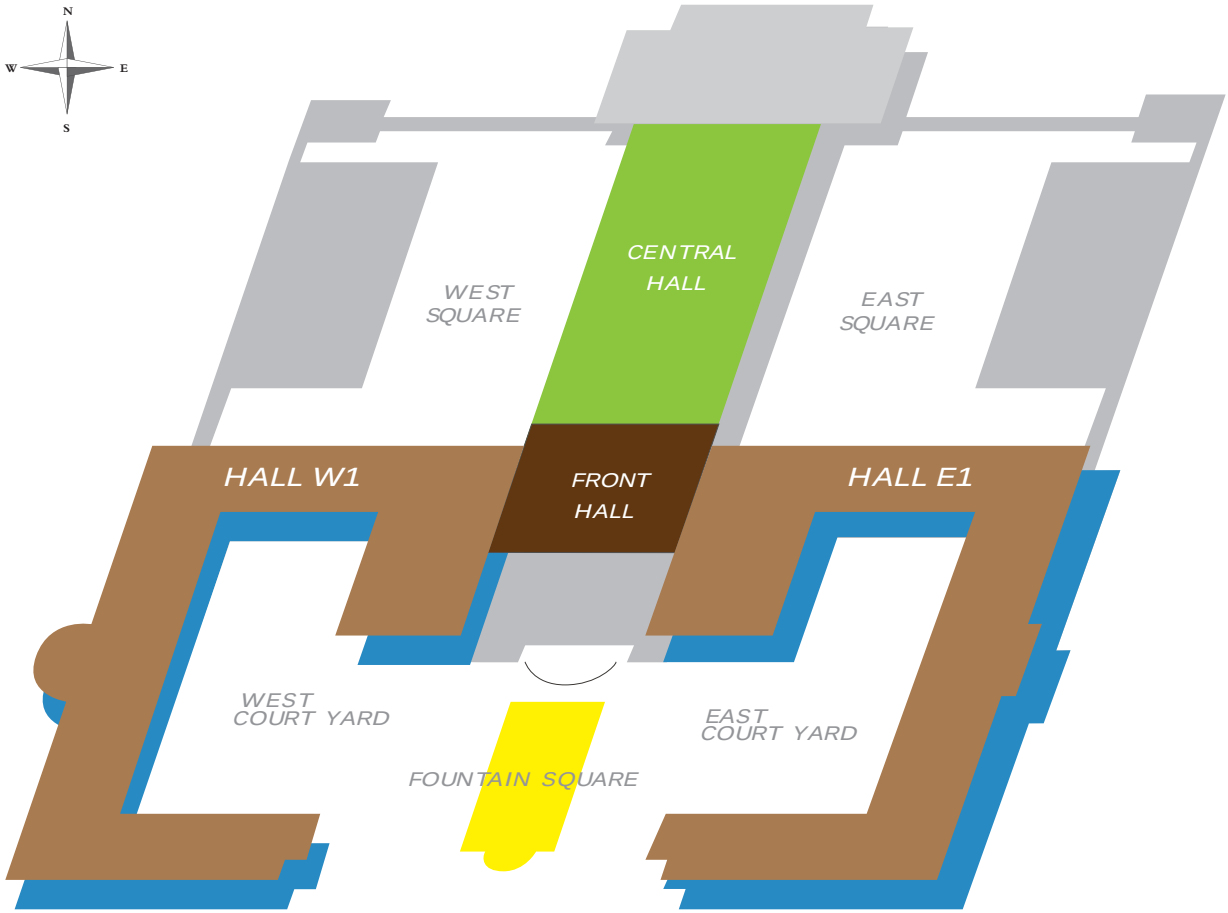
Architecturally, SEC is blessed with a unique characteristic. With its magnificent and elegant styles and exquisitely graceful decorations, SEC was awarded in 1989 the title of one of the "Shanghai Ten Best Architectures in the period of 1949-1989". In 1999, it is again ranked among "Shanghai Ten classic Architectures with Gold Medals".

According to their functionality, SEC is divided into two parts, the north part and the south part. With Front Hall, Central Hall, East Hall 1 (Hall E1), West Hall 1 (Hall W1), West Hall 2 (Hall W2), the southern part forms an exhibition and congress area; Friendship Hall together with East Hall 2 (Hall E2) in the north is designated as the conference area.

No.1000, Middle Yanan Road
Shanghai City

www.shzlzx.com.cn

Layout for Congress and Exhibition



The exhibition is an important part of the 27th CIMAC World Congress.

Congress coffee break is offered at the first floor of both Exhibiton Hall E1 and Hall W1.

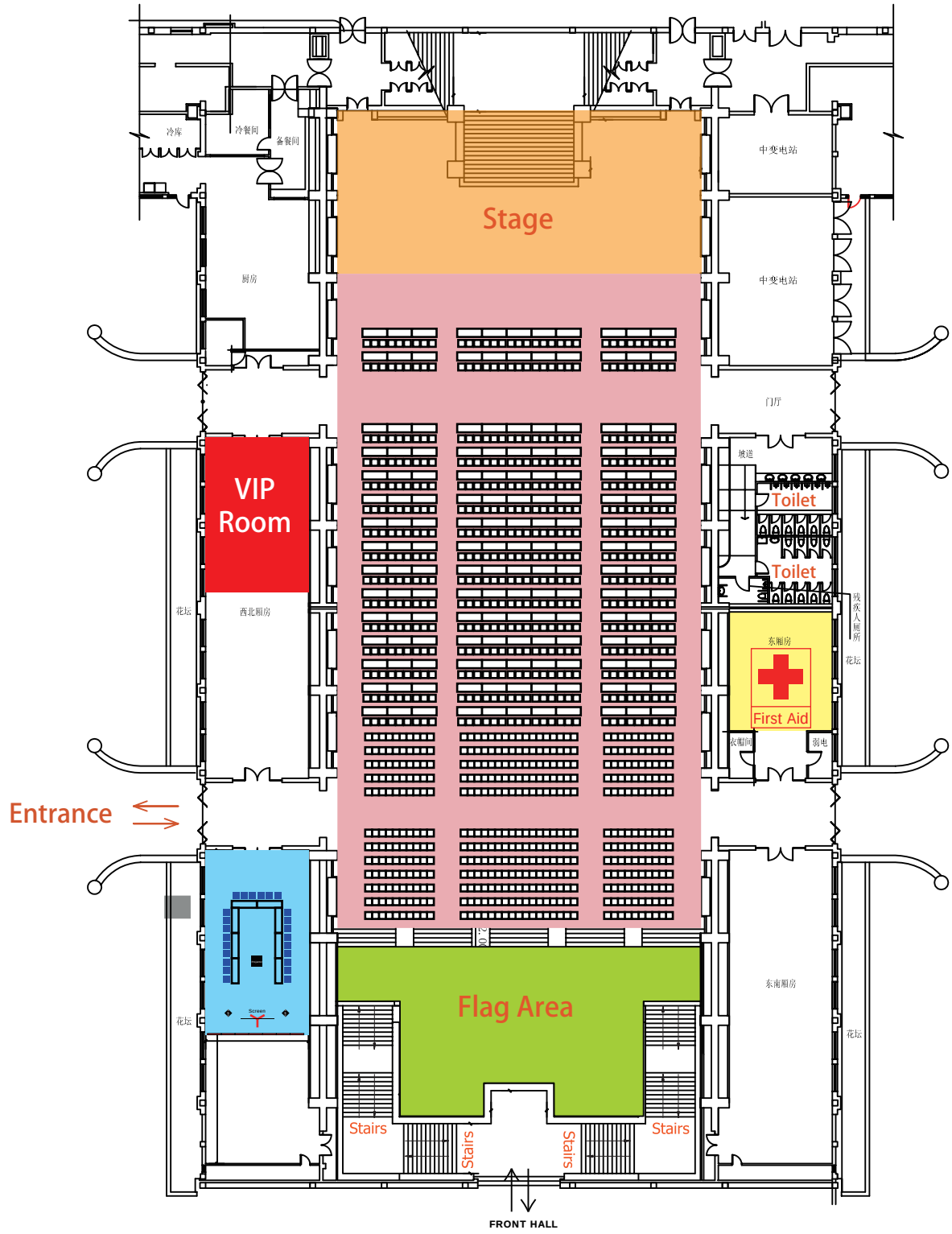
Note:

W1=NO.1 West Hall E1=NO.1 East Hall

1F=First floor 2F=Second floor

CENTRAL HALL	Opening Ceremony Special Collin Trust Lecture Final Panel Discussion Lunch
1F	
HALL W1	Exhibition
HALL E1	Exhibition
FOUNTAIN SQUARE	Departure point of Optional Tours
2F	
HALL W1	Sessions
HALL E1	Sessions
FRONT HALL	Congress Secretariat CIMAC Secretariat Slide Center Press Center Volunteer Center

Central Hall



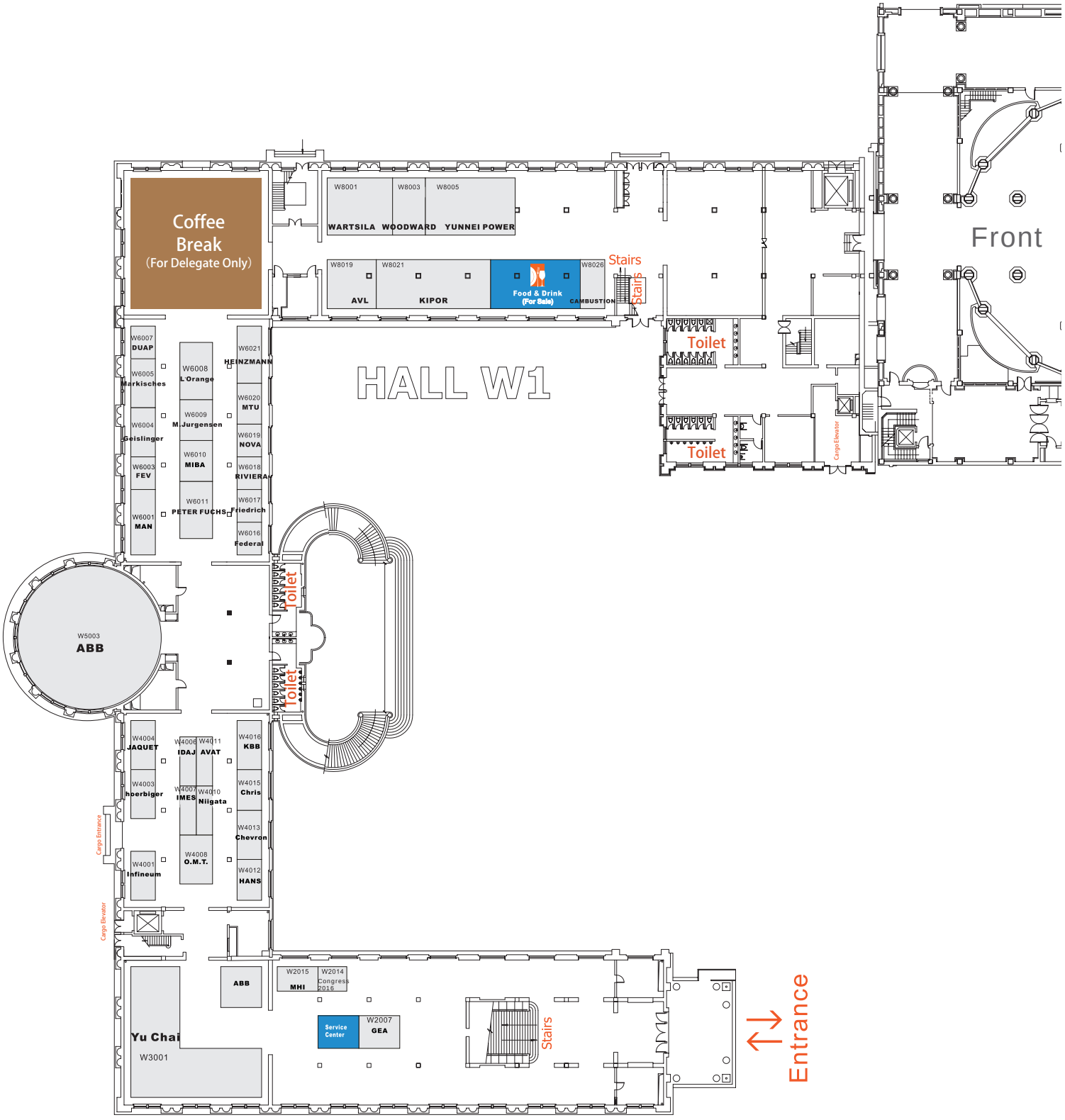
Opening Ceremony
Special Collin Trust Lecture
Final Panel Discussion
Lunch

Internal Meeting Room

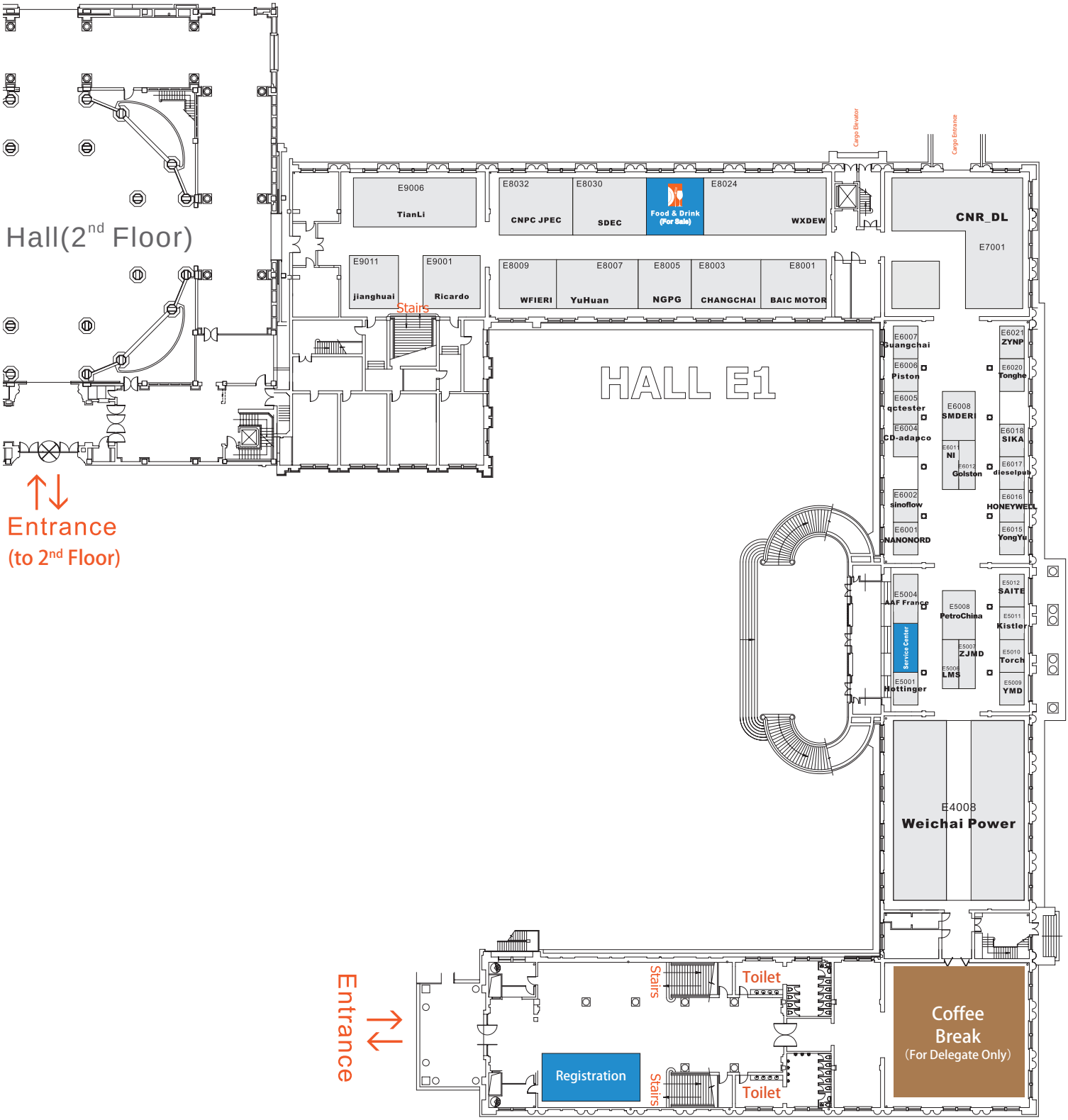
VIP Room for Opening Ceremony

First Aid

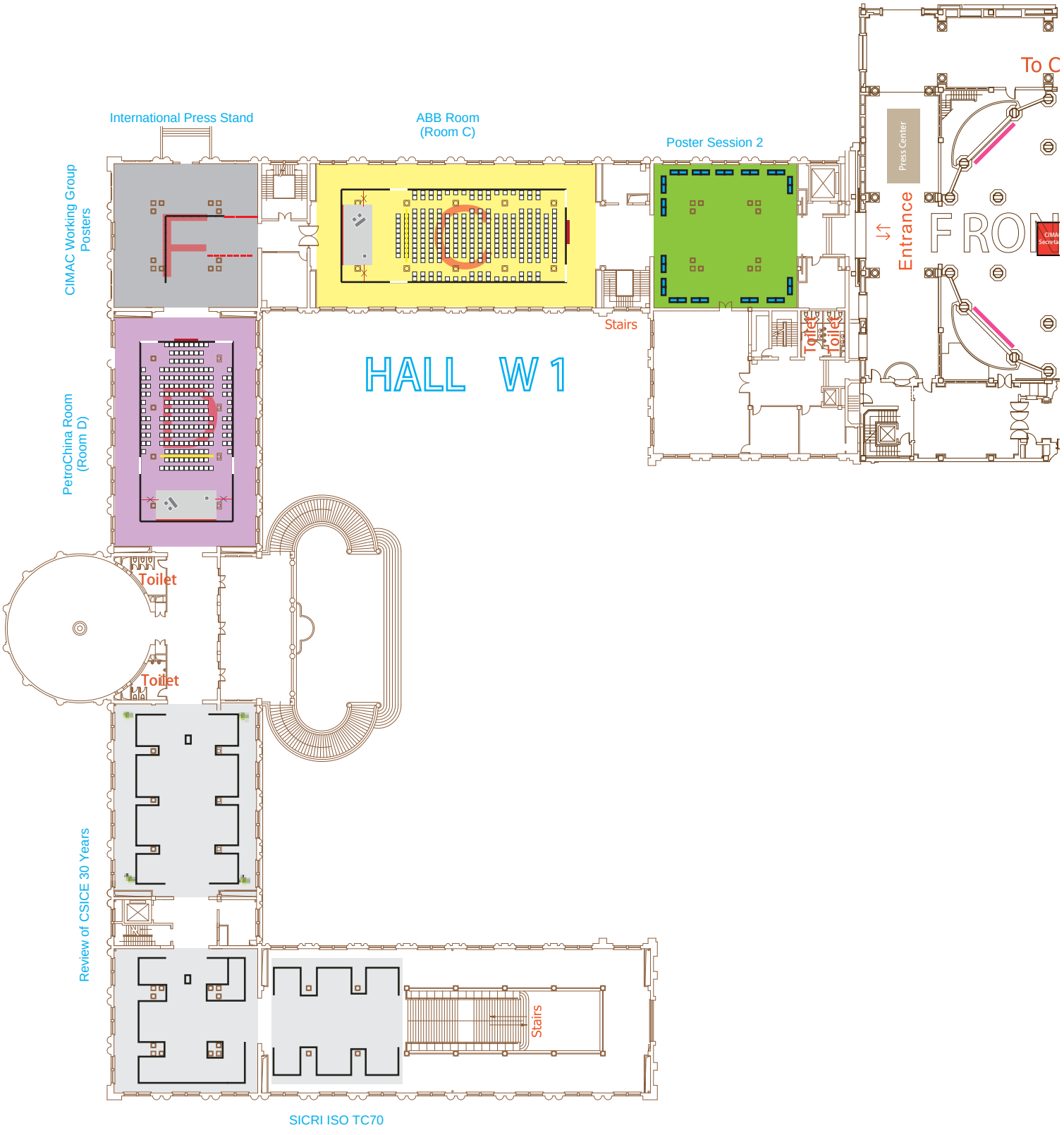
First Floor of Hall W1



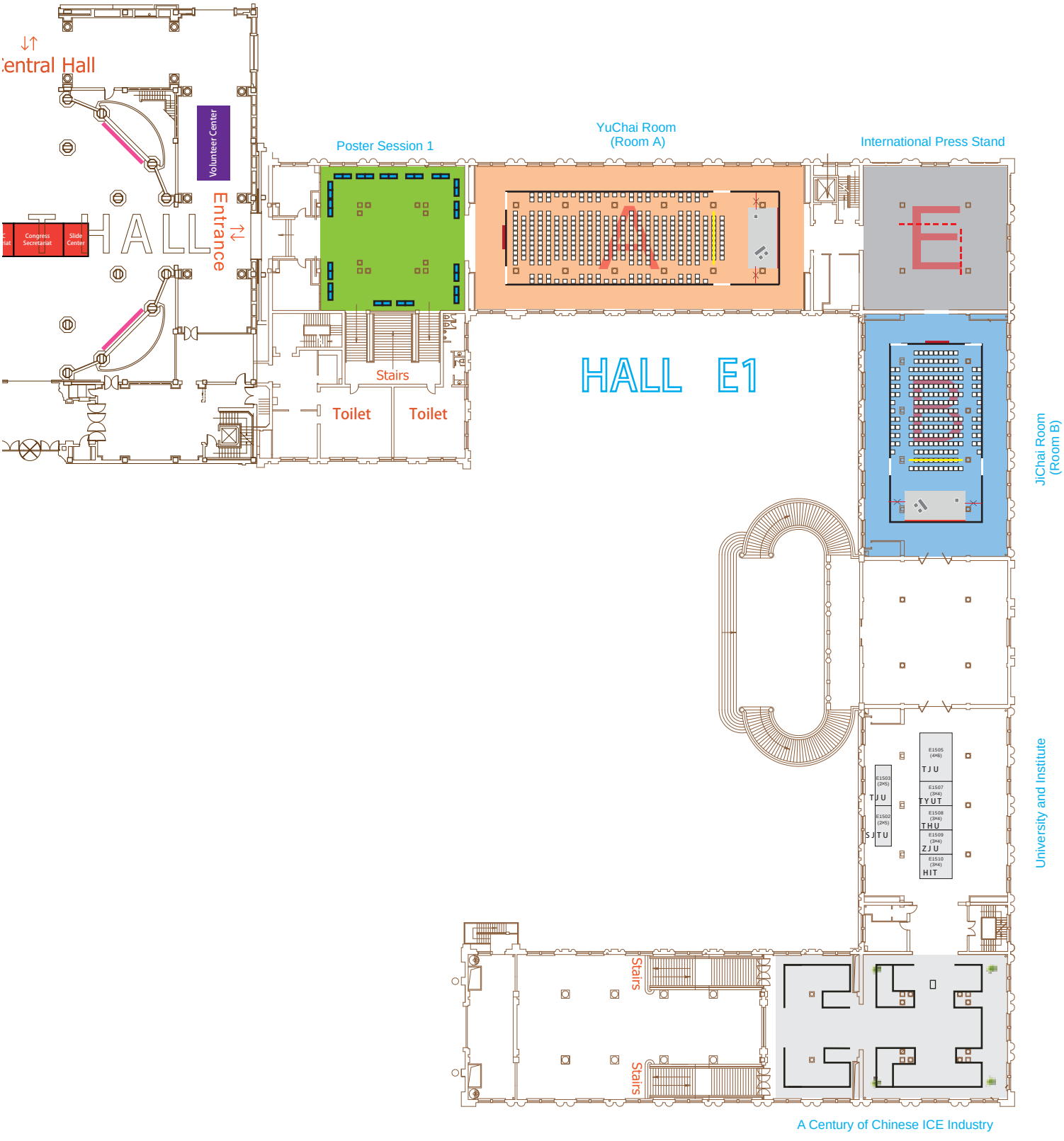
First Floor of Hall E1



Second Floor of Hall W1



Second Floor of Hall E1



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Power and productivity
for a better world™

Final Programme for Monday, 13th May, 2013

08:00	Registration at Shanghai Exhibition Center
09:30 – 11:00	Opening Ceremony at Central Hall Keynote Speech by Prof. Wanhua Su, *Tianjin University*
11:00 – 12:00	Visit Exhibition

The Technical Programme

The Technical Programme of the 27th CIMAC Congress will deal with diesel engines, gas engines and steam turbines, their components and systems, covering marine, stationary and rail applications, with a special focus on the role of engine users. The Technical Programme will be developed in the Technical Sessions and the Poster Sessions.

Technical Sessions

The high level Technical Sessions together with panels of technicians, top managers and users will enhance the communication to evaluate the impacts on the internal combustion engine industry. The topics will be:
Session 01: Product Development - Diesel Engines
Session 02: Product Development - Gas & Dual Fuel Engines
Session 03: Fundamental Engineering
Session 04: Environment, Fuel & Combustion - Diesel Engines
Session 05: Environment, Fuel & Combustion - Gas & Dual Fuel Engines
Session 06: Aftertreatment
Session 07: Tribology
Session 08: Component & Maintenance Technology
Session 09: Integrated Systems & Electronic Control - Piston Engines, Gas & Steam Turbines & Applications
Session 10: Turbochargers
Session 11: Users' Aspects - Marine Application
Session 12: Users' Aspects - Land-based Applications

Poster Sessions

On Tuesday, Wednesday and Thursday, 68 Papers will be presented in the poster area. Opening time is from 10:00 to 16:00. Make use of this opportunity to discuss your topics with the authors directly and without any time pressure. The authors will be awaiting you for explanation and discussion in their booths.

Please note that the programme may have to be changed at short notice

Final Programme for Monday, 13th May, 2013

Time	YuChai Room (Room A)	JiChai Room (Room B)	ABB Room (Room C)	PetroChina Room (Room D)
13:30 – 15:00	(12) Users' Aspects – Land-Based Applications	(8-1) Component & Maintenance Technology – Bearings, Valves	(4-1) Environment, Fuel & Combustion – Diesel Engines – Fuel Injection 1	(7-1) Tribology 1
	Chairman: T. Callahan, *Southwest Research Institute, USA* Vice Chairman: S. Liang, *CNR (Dalian) Diesel Engine Co., Ltd,China*	Chairman: F. Koch, *Schaffner, Switzerland* Vice Chairman: H. Feng, *Beijing Institute of Technology, China*	Chairman: N. Kjemtrup, *MAN Diesel & Turbo, Denmark* Vice Chairman: M. Yao, *State Key Laboratory of Engines of Tianjin University, China,* K. Li, *China FAW Group Corporation R&D Center, China*	Chairman: R. Aufischer, *Miba, Austria* Vice Chairman: X. Xu, *PetroChina Lanzhou Lube Oil R&D Institute, China,* Dr. X. Meng, *Shanghai Jiaotong University, China*
	294: Improvements & New Applications of the MAN 51/60 Gas Engine for Marine & Power Plant, *by N. Boeckhoff, H. Mögele, MAN Diesel & Turbo, Germany* **27: Development of Mitsubishi Large Frame Gas Turbine for Power Generation - A new 1600°C, J Class Gas Turbine,** *by K. Takamura, S. Torii, S. Hada, J. Masada, Mitsubishi Heavy Industory, Japan* **28: Upgrading Emergency Diesel Generators at Nuclear Power Plants,** *by A. Killinger, M. O´Connell, MPR Associates, USA* **312: Achieving of Programmable Control & Management for the Emergency Diesel Generating Sets in Thermal Power Plant,** *by X. Chang, X. Yang, Henan Diesel Engine Group Co., Ltd., China*	**420: New Bearing Concepts to Fulfill Application Related Challenges for Future Engines,** *by R. Aufischer, F. Langbein, L. Harreither, Miba Bearing Group, Austria, J. Qiang, O. Feng, Miba Precision Components, China* **407: Quality Control of Welding Type Sn-Sb-Cu Plain Bearing for Marine Engine,** *by J. Hwang, Hyundai Heavy Industries, Korea* **224: Improving Safety of Engines in Service by Continuously Monitoring Big End Bearings Temperatures,** *by P. Flot, A. Meslati, CMR, France* **3: Future HFO/GI Exhaust Valve Spindle,** *by U. Bihlet, H. Hoeg, MAN Diesel & Turbo, Denmark*	**101: New Platform Based Common Rail Injector for MTU Series 1163,** *by C. Senghaas, M. Ligensa, L'Orange, Germany, K. Reischmann, MTU Friedrichshafen, Germany* **157: Multi-Injection & Advanced Miller Timing in Large-Bore CI Engine,** *by M. Imperato, J. Nurmiranta, T. Sarjovaara, M. Larmi, Aalto University, Finland, C. Wik, Wärtsilä, Finland* **143: Fuel Injection Concept for the Future Clean Diesel Engines,** *by R. Minamino, T. Kawabe, H. Omote, S. Okada, Yanmar Co. Ltd., Japan* **384: Development Trend & Optimized Matching of Fuel Injection System of Diesel Engine,** *by Z. Gao, B. Yin, S. Liu, Jiangsu University, China, J. Zhu, Y. Ju, Y. Hang, Wuxi Fuel Injection Equipment Research Institute, China*	**90: The Benefit of Using Group II Base Oils in Medium Speed Engines,** *by L. Gregory, Infineum, UK* **177: Cylinder Liner & Piston Ring Lubrication Issues in Relation to Increase Stroke/Bore Ratio,** *by S. Miyake, K. Harada, M. Kotake, Mitsui, Japan, C. Felder, J. Fogh, MAN Diesel & Turbo, Denmark* **211: Investigation of Microstructured Cylinder Liner Surfaces for Friction Reduction,** *by H. Ulmer, F. Dinkelacker, J. Kaestner, B. Denkena, C. Huebsch, F. Bach, University Hannover, Germany* **266: Measurement of Piston Ring Lubricant Film Thickness in a Fired Engine using Ultrasonic Reflectometry,** *by P. Harper, Tribosonics, UK, M. Stark, Wärtsilä, Switzerland*
15:00	Coffee break			

Final Programme for Monday, 13th May, 2013

Time	YuChai Room (Room A)	JiChai Room (Room B)	ABB Room (Room C)	PetroChina Room (Room D)
15:30 – 17:00	(11-3) Users' Aspects – Marine Application – Gas & Emissions	(8-2) Component & Maintenance Technology – Injection	(4-2) Environment, Fuel & Combustion – Diesel Engines – Fuel Injection 2	(7-2) Tribology 2
	Chairman: Ø. Toft, *BW Fleet, Norway* Vice Chairman: Y. Huang, *Naval University of Engineering, China,* Z. Ji, *School of Power and Energy Engineering, Harbin Engineering University, China*	Chairman: S. Laiminger, *GE Jenbacher, Austria* Vice Chairman: H. Feng, *Beijing Institute of Technology, China*	Chairman: N. Kyrtatos, *National Technical University of Athens, Greece* Vice Chairman: M. Yao, *State Key Laboratory of Engines of Tianjin University, China,* K. Li, *China FAW Group Corporation R&D Center, China*	Chairman: H. Gehring, *MAN Diesel & Turbo, Germany* Vice Chairman: X. Xu, *PetroChina Lanzhou Lube Oil R&D Institute, China,* Dr. X. Meng, *Shanghai Jiaotong University, China*
	265: Alternative Fuels for Maritime Applications, *by C. Chryssakis, S. Stahl, DNV, Norway* **158: Operational Experiences of DNV classed Gas Fuelled Vessels,** *by T. Dirix, DNV, Norway* **189: LNG as Ship's Fuel – Bunkering, Storage & Processing for Medium & Slow Speed Engines,** *by J. Harperscheidt, TGE Marine Gas Engineering, Germany* **159: Tier III Technology Development & its Influence on Ship Installation & Operation,** *by C. Wik, Wärtsilä, Finland*	**427: The 2200 bar Modular Common Rail Injection System for Large Engine Diesel & HFO Engines,** *by C. Kendlbacher, M. Bernhaupt, D. Blatterer, C. Meisl, Robert Bosch AG, Austria* **223: Advanced HFO Common Rail Injector for Maximising the Performance of Medium Speed Engines,** *by M. Coppo, C. Negri, M. Destro, K. Heim, OMT, Italy* **201: Fatigue Design of Autofrettaged Diesel Engine Injection Parts,** *by R. Thumser, W. Wagner, MAN Diesel & Turbo, Germany, J. Bergmann, MFPA, Germany* **8: New Low Cost Common Rail System with Zero Static Leakage,** *by R. Fuechslin, Lafei, Switzerland*	**171: 30 MPa Mixing Controlled Combustion,** *by M. Larmi, A. Elonheimo, T. Sarjovaara, M. Imperato, Aalto University, Finland, I. Kallio, Wärtsilä, Finland* **252: Characterization of Residual Fuel Compositions & the Effect on the Ignition & Combustion Performance,** *by C. Takahashi, Y. Yamaguchi, T. Senda,National Maritime Research Institute, Japan, S. Imai, National Institute for Minamata Disease, Japan* **237: Measurements of Soot Particles in Single Spray Combustion with a Rapid-Compression Machine,** *by H. Okada, Tokyo University of Marine Science and Technology, Japan, C. Sugawara, Ministry of Transport, Japan* **43: Alternative Marine Fuels & the Effect on Combustion & Emission Characteristics,** *by V. Aesoy, Alesund College, Norway, N. Bremnes, E. Hennie, S. Ushakov, Marintek, Norway*	**Short presentation of WG 8 'Marine Lubricants'** **78: Novel Trends in Journal Slide Bearing Technology - Active Use of Tribochemical Effects,** *by M. Offenbecher, Miba, Austria, H. Li, Miba, China, E. Laine, Infineum, UK, F. Gruen, Montanuniversität Leoben, Austria* **94: System Oil for 2-Stroke Marine Engines - Current & Future Performance Requirements & Challenges,** *by J. Smythe, Infineum, UK, G. Bleimschein, Wärtsilä, Switzerland* **108: Impact of Marine Lubricant Additives on SCR Catalyst Performance,** *by M. Boons, P. van Houten, Chevron Oronite, Netherlands, J. Fogarty, ExxonMobil, USA, M. Brandmair, M. Ziesmann, J. McCarney, P. Anderson, Johnson Matthey GmbH, Germany* **196: Optimization of the Piston Ring - Cylinder Liner System in Gas-Engines for Power Generation,** *by J. Schiffer, H. Krampl, I. Godor, F. Gruen, Montanuniversität Leoben, Austria, M. Betz, S. Laiminger, GE Jenbacher, Austria*
17:00	End of Technical Sessions for Monday			
18:00	Welcome Reception			

Final Programme for Tuesday, 14th May, 2013

Time	YuChai Room (Room A)	JiChai Room (Room B)	ABB Room (Room C)	PetroChina Room (Room D)
08:30 – 10:00	(1-1) Product Development – Diesel Engines – 2-Stroke Low-Speed Engines	(2-1) Product Development – Gas & Dual Fuel Engines – New Gas Engine Types 1	(4-3) Environment, Fuel & Combustion – Diesel Engines – Optical Measurement – 2 and 3D simulation	(7-3) Tribology – 2-Stroke Cylinder Lubricant
	Chairman: A. Eklund, *Wärtsilä, Switzerland* Vice Chairman: F. Wang, *Shanghai Marine Diesel Engine Research Institute, China,* Z. Lin, *Guangxi Yuchai Machinery Co., Ltd, China*	Chairman: L. Nerheim, *Bergen University College, Norway* Vice Chairman: C. Yao, *State Key Laboratory of Engines Tianjin University, China,* L. Li, *College of Mechanical Engineering, Tongji University, China*	Chairman: K. Takasaki, *Kyushu University, Japan* Vice Chairman: M. Yao, *State Key Laboratory of Engines of Tianjin University, China,* K. Li, *China FAW Group Corporation R&D Center, China*	Chairman: J. Erdtmann, *NSB Niederelbe, Germany* Vice Chairman: X. Xu, *PetroChina Lanzhou Lube Oil R&D Institute, China,* Dr. X. Meng, *Shanghai Jiaotong University, China*
	326: Upgrade of Wärtsiläs Two-Stroke Engine Portfolio to Fulfil the Changing Marine Market Requirements, *by H. Brunner, J. Constantin, B. Schumacher, Wärtsilä, Switzerland* **71: State-of-the-Art MAN B&W Two-Stroke Super-Long-Stroke Engines,** *by S. Kindt, MAN Diesel & Turbo, Denmark* **267: The New X Generation Low-Speed Engines from Wärtsilä,** *by M. Spahni, A. Kyrtatos, R. de Rong,Wärtsilä, Switzerland* **209: Contribution of Turbocharging Solutions Towards Improved Fuel Efficiency of Two-Stroke Low Speed Engines,** *by P. Schürmann, M. Hubacher, C. Christen, R. Ryser, D. Brand, ABB Turbo Systems, Switzerland*	**291: The New Dual Fuel Engine 35/44 DF from MAN Diesel & Turbo SE,** *by A. Menage, MAN Diesel & Turbo, Germany, A. Gruand, MAN Diesel & Turbo, France* **411: Caterpillar M46 Dual Fuel Engine with New Cylinder Pressure Based Control Strategies,** *by B. Ritscher, Caterpillar, Germany, M. Greve, AVAT Automation, Germany* **284: Development of a Dual Fuel Technology for Slow-Speed Engines,** *by I. Nylund, Wärtsilä, Finland, M. Ott, Wärtsilä, Switzerland* **289: GE's All New J920 Gas Engine – a Smart Accretion of Two-Stage Turbocharging, Ultra Lean Combustion Concept & Intelligent Controls,** *by C. Trapp, A. Birgel, N. Spyra, H. Kopecek, D. Chvatal, GE Jenbacher, Austria*	**53: Advanced Optical & Numerical Development Tools for Two-Stroke Marine Diesel Engines,** *by S. Mayer, J. Hult, K. Nogenmyr, MAN Diesel & Turbo, Denmark, S. Clausen, Technical University of Denmark, Denmark* **299: CFD Simulation of the Working Process of Conical Spray Combined Swirl-Chamber Diesel Engine,** *by L. Feng, W. Long, Dalian University of Technology, China, W. Feng, CNOOC Energy Development, China* **259: Development of Spray & Combustion Simulation Tools & Application to Large Two-Stroke Diesel Engine Combustion Systems,** *by R. Schulz, S. Hensel, B. von Rotz, A. Schmid, K. Herrmann, G. Weisser, Wärtsilä, Switzerland* **243: Flame Temperature & Soot Concentration of Single Spray Flame of Bunker Fuel Oil in OCA (Optical Combustion Analyzer) Using Two-Color Method,** *by E. Tomita, K. Kawato, N. Kawahara, Okayama University, Japan, K. Morinaka, Y. Yamamoto, Eiwa-Giken, Japan*	**82: Field Trial Findings on Slow Steaming Cylinder Oil Selection,** *by P. Harrold, BP Fuels & Lubricants Technology, UK* **84: Cylinder Lubrication - Utilising the Latest Findings on Low Speed 2-Stroke Diesel Engine Oil Stress from Field & Laboratory Engine Testing in the Development of a Wide Range Cylinder Lubricant – Shell Alexia S4,** *by J. Garcia Ojeda, J. Hammett, J. Schakel, J. Moeller, Shell Global Solutions, Germany* **120: Reliable Lubrication of Slow Speed Engines Operated with Varying Fuel Sulfur Levels,** *by L. Verbeeke, Chevron, Belgium* **128: Multifunctional Marine Cylinder Lubricant,** *by N. Arimoto, S. Takeshima, Nippon Oil Corporation, Japan* **233: Optimized Cylinder Oil for Today`s & Tomorrow`s Heavy Fuels – Field Experience in MAN Diesel & Turbo 2-Stroke Marine Diesel Engines,** *by K. Crouthamel, ExxonMobil, USA* **392: The Efficient BASicity (EBAS): a Method to Assess the Performance Durability of Marine Cylinder Lubricants,** *by C. Amblard, S. Esson, Total, France*
10:00	Coffee break			

Final Programme for Tuesday, 14th May, 2013

Time	YuChai Room (Room A)	JiChai Room (Room B)	ABB Room (Room C)	PetroChina Room (Room D)
10:30 – 12:00	(1-2) Product Development – Diesel Engines – Medium Speed engines 1	(2-2) Product Development – Gas & Dual Fuel Engines – New Gas Engine Types 2	(4-4) Environment, Fuel & Combustion – Diesel Engines – Engine Simulations	(10-1) Turbochargers – New Products 1
	Chairman: A. Ludu, *AVL, Austria* Vice Chairman: F. Wang, *Shanghai Marine Diesel Engine Research Institute, China,* Z. Lin, *Guangxi Yuchai Machinery Co., Ltd, China*	Chairman: J. Hiltner, *Hiltner Combustion, USA* Vice Chairman: C. Yao, *State Key Laboratory of Engines Tianjin University, China,* L. Li, *College of Mechanical Engineering, Tongji University, China*	Chairman: H. Götze, *Germanischer Lloyd SE, Germany* Vice Chairman: M. Yao, *State Key Laboratory of Engines of Tianjin University, China,* K. Li, *China FAW Group Corporation R&D Center, China*	Chairman: C. Roduner, *ABB Turbo Systems, Switzerland* Vice Chairman: J. Zhang, *China North Engine Research Institute, China,* Q. Wang, *ABB Turbocharging china, China*
	83: The CRISTAL Engine: ABC's New Medium Speed Diesel Engine, Developed to Comply with IMO III, *by L. Vervaeke, T. Berckmoes, Anglo Belgian Corporation, Belgium, S. Verhelst, University of Ghent, Belgium* **151: HiMSEN Full Line-Up by New H46 Model,** *by C. Seo, S. Kim, J. S. Kim, J. T. Kim, Hyundai Heavy Industries, Korea* **282: Update on Wärtsilä 4-Stroke Diesel ProductDevelopment,** *by R. Ollus, P. Tonon, P. Aaltonen, M. Vaarasto, C. Roesgren, D. Delneri, Wärtsilä, Finland, A. Bochicchio, M. Dapinguente, M. Troberg, Wärtsilä, Italy, A. Hultqvist, Wärtsilä, Switzerland* **198: MAN Diesel & Turbo Product Portfolio of Diesel Engines Adapted to Actual Challenges,** *by D. Kurth, S. Adorf, A. Grabmaier, L. Gruensteudel, S. Kolb, B. Offinger, MAN Diesel & Turbo, Germany*	**421: MACH II-SI Achieved Higher Thermal Efficiency,** *by S. Hajime, Y. Hiroshi, I. Michiyasu, N. Shoji, O. Shinnosuke, Mitsubishi Heavy Industries, Japan* **67: The New MTU Type L64 of Series 4000 Gas Engines,** *by U. Sander, MTU Friedrichshafen, Germany* **406: Update on Wärtsilä 4-Stroke Gas Product Development,** *by M. Troberg, Wärtsilä, Italy, K. Portin, A. Jarvi, Wärtsilä, Finland* **99: Advanced Development of Medium Speed Gas Engine Targeting to Marine & Land,** *by K. Watanabe, S. Goto, T. Hashimoto, Niigata Power Systems, Japan*	**225: Recent Developments in the Understanding of the Potential of In-Cylinder NOx Reduction through Extreme Miller Valve Timing,** *by P. Kyrtatos, P. Obrecht, K. Boulouchos, ETH Zürich, Switzerland, K. Hoyer, Paul Scherrer Institut, Switzerland* **74: Computational Analysis of Different Internal & External EGR Systems Combined with Miller Cycle Concept for a Medium Speed Marine Diesel Engine,** *by F. Millo, M. Gianoglio Bernardi, Polytechnico di Torino, Italy, E. Servetto, Powertech Engineering, Italy, D. Delneri, Wärtsilä, Finland* **253: Experimental Experience Gained with a Long-Stroke Medium-Speed Diesel Research Engine Using Two Stage Turbo Charging & Extreme Miller Cycle,** *by M. Fiedler, H. Fiedler, FMC-Fiedler Motoren, Germany, P. Boy, Flensburg University, Germany* **301: Investigation on the Control Strategies of a Heavy-Duty Diesel Engine with High Efficiency & Low Emissions,** *by M. Yao, Tianjin University, China*	**226: New Turbochargers for Modern Large Engines with Low Emissions & High Performance,** *by S. Risse, K. Buchmann, Kompressorenbau Bannewitz GmbH, Germany* **134: Second Generation of Two-Stage Turbocharging Power2 Systems for Medium Speed Gas & Diesel Engines,** *by M. Kahi, T. Behr, A. Reichl, ABB Turbo Systems, Switzerland* **206: TCX – The New High Pressure Turbocharger for Two Stage Turbocharging,** *by J. Klima, V. Hort, PBS Turbo, Czech Republic, M. Haidn, MAN Diesel & Turbo, Germany* **69: Development of High-Pressure Ratio & High-Efficiency Type Turbocharger,** *by K. Matsumoto, IHI Corporation, Japan*
12:00	Lunch			

Final Programme for Tuesday, 14th May, 2013

Time	YuChai Room (Room A)	JiChai Room (Room B)	ABB Room (Room C)	PetroChina Room (Room D)
13:30 – 15:00	(1-3) Product Development – Diesel Engines – Medium Speed engines 2	(2-3) Product Development – Gas & Dual Fuel Engines – Controls & Emissions	(4-5) Environment, Fuel & Combustion – Diesel Engines – Combustion Simulations	(10-2) Turbochargers – New Products 2
	Chairman: H. Pleimling, *FEV, Germany* Vice Chairman: F. Wang, *Shanghai Marine Diesel Engine Research Institute, China,* Z. Lin, *Guangxi Yuchai Machinery Co., Ltd, China*	Chairman: I. Vlaskos, *Ricardo, Germany* Vice Chairman: C. Yao, *State Key Laboratory of Engines Tianjin University, China,* L. Li, *College of Mechanical Engineering, Tongji University, China*	Chairman: K. Boulouchos, *ETH Zürich, Switzerland* Vice Chairman: M. Yao, *State Key Laboratory of Engines of Tianjin University, China,* K. Li, *China FAW Group Corporation R&D Center, China*	Chairman: A. Rippl, *MAN Diesel & Turbo, Germany* Vice Chairman: J. Zhang, *China North Engine Research Institute, China,* Q. Wang, *ABB Turbocharging china, China*
	135: Development of New Environmentally Friendly Diesel Engines 6DE-18 & 6DE-23, *by K. Hanamoto, T. Okauchi, K. Sato, S. Ogura, M. Horikawa, J. Asano, Daihatsu, Japan* **388: Development of the New Medium Speed Marine Diesel Engine CS21,** *by G. Liang, Z. Chen, F. Wang, B. He, L. Li, Shanghai Marine Diesel Engine Research Institute, China, E. Reichert, S. Lauer, FEV, Germany* **55: Development of Niigata Medium Speed Diesel Engine 17AHX,** *by J. Sato, K. Toda, T. Saito, Niigata Power Systems, Japan* **22: Small Bore Four-Stroke Engines from MAN Diesel & Turbo,** *by F. Fjeldhoej, MAN Diesel & Turbo, Denmark*	**417: The New Bergen B35:40 Lean Burn Marine Gas Engine Serie & Practical Experiences of SI Lean Burn Gas Engines for Marine Mechanical Drive,** *by H. Solbakken, T. Eide, R. Nordrik, Bergen Engines AS, Norway* **62: Development & Application of Low Concentration Mine Gas Engine,** *by S. Qu, China North Engine Research Institute, China, S. Mu, G. Zhang, Shengli Power Machinery, China, K. Deng, Shanghai Jiao Tong University, China* **271: The Potential of Exhaust Gas Recirculation in Large Gas Engines,** *by A. Wimmer, G. Pirker, J. Zelenka, F. Chmela, Graz University of Technology, Austria, J. Zurlo, GE Energy, USA, C. Trapp, GE Jenbacher, Austria* **45: Progress & Development of Next Generation Ignition Systems for Guascor Gas Engines,** *by M. Weinrotter, I. Oregui, L. Alonso, I. Iruretagoiena, D. Pérez de Larraya, Guascor, Spain*	**232: Computational Analysis of Switching Strategies for a Medium-Speed Diesel Engine EGR Concept Between IMO Tier II & Tier III Operation Modes,** *by C. Stoeber-Schmidt, Technical University Braunschweig, Germany* **250: Potential Investigation of PCCI Combustion as NOx Reduction Measure at Low-load Operation with Low-CN LCO Fuel,** *by H. Tajima, Kyushu University, Japan* **288: PPC Combustion for Low Load Conditions in a Marine Engine Using Computational & Experimental Techniques,** *by K. Shrestha, Aalto University of Technology, Finland* **192: Combustion Development of New Medium-Speed Marine Diesel Engine,** *by W. Zhang, Shanghai Marine Diesel Engine Research Institute, China*	**116: VTG Turbocharging – a Valuable Concept for Traction Application,** *by P. Jacoby, ABB Turbo Systems, Switzerland, H. Xu, D. Wang, ABB Turbo Systems, China* **214: TCS-PTG - MAN Diesel & Turbo's Power Turbine Portfolio for Waste Heat Recovery,** *by S. Mest, O. Loewlein, D. Balthasar, H. Schmuttermair, MAN Diesel & Turbo, Germany* **15: Solutions for Better Engine Performance at Low Load by Mitsubishi Turbochargers,** *by Y. Ono, Mitsubishi Heavy Industries, Japan* **258: Computational Investigation of Turbocharger Performance Degradation Effect on 2-Stroke Marine Diesel Engine Performance,** *by N. Sakellaridis, D. Hountalas, National Technical University of Athens, Greece*
15:00	Coffee break			

Final Programme for Tuesday, 14th May, 2013

Time	YuChai Room (Room A)	JiChai Room (Room B)	ABB Room (Room C)	PetroChina Room (Room D)
15:30 – 17:00	(1-4) Product Development – Diesel Engines – High Speed Engines	(2-4) Product Development – Gas & Dual Fuel Engines – Mixture Formation	(4-6) Environment, Fuel & Combustion – Diesel Engines – Nox Reduction by O2 Reduction	(10-3) Turbochargers – Turbocharging & Components
	Chairman: C. Teetz, *MTU Friedrichshafen, Germany* Vice Chairman: F. Wang, *Shanghai Marine Diesel Engine Research Institute, China,* Z. Lin, *Guangxi Yuchai Machinery Co., Ltd, China*	Chairman: S. Goto, *Niigata Power Systems, Japan* Vice Chairman: C. Yao, *State Key Laboratory of Engines Tianjin University, China,* L. Li, *College of Mechanical Engineering, Tongji University, China*	Chairman: R. Turunen, *VTT, Finland* Vice Chairman: M. Yao, *State Key Laboratory of Engines of Tianjin University, China,* K. Li, *China FAW Group Corporation R&D Center, China*	Chairman: V. Haueisen, *ABB Turbo Systems, Switzerland* Vice Chairman: J. Zhang, *China North Engine Research Institute, China,* Q. Wang, *ABB Turbocharging china, China*
	410: Aspects of a Tier 4 Development for a Multi-Application High Speed Diesel Engine, *by K. Foelzer, T. Kammerdiener, M. Zallinger, AVL List, Austria* **161: First High Speed HiMSEN Engine, H17V Model,** *by J. Kim, Hyundai Heavy Industries, Korea* **239: Diesel Engine Development for Low Emissions at GE Transportation,** *by R. Mischler, P. Flynn, GE Transportation, USA* **112: Series 1163-04,** *by M. Kurreck, W. Remmels, MTU Friedrichshafen, Germany*	**50: Optimization of Mixture Formation in Medium Speed Dual-Fuel & Gas Engines with Support of Advanced Optimization Techniques & Optical Measurements,** *by U. Waldenmaier, S. Djuranec, G. Stiesch, MAN Diesel & Turbo, Germany, F. Unfug, U. Wagner, Karlsruhe Institute of Technology, Germany* **202: Functional Improvement of a Gas Metering Valve,** *by J. Hess, Heinzmann, Germany* **429: The Power & Efficiency Upgrade Approach for the Development of the New Caterpillar 10 MW Medium Speed Gas Engine,** *by Germany, I. Vlaskos, Ricardo, Germany* **113: Ported Fuel Injection for Maritime Gas Engines, G. Ranegger,** *by G. Kogler, P. Steinrueck, Hoerbiger, Austria*	**Short presentation of WG 7 'Fuels'** **423: Reduction of NOx Emission by 80% Using the Newly Developed System with a Polymer Membrane in Marine Diesel Engines,** *by K. Maeda, D. Yamanishi, National Fisheries University, Japan, H. Ohno, A. Shimizu, T. Niihama, M. Tsukamoto, Asahi Kasei Chemicals Corporation, Japan, A. Azetsu, Tokai University, Japan* **219: Development of Integrated EGR System for Two-Stroke Diesel Engines,** *by J. Kaltoft, M. Preem, MAN Diesel & Turbo, Denmark* **200: Newly Developed Combined EGR & WEF System to comply with IMO NOx Regulation Tier 3 for Two-Stroke Diesel Engine,** *by M. Higashida, T. Nakamura, I. Onishi, K. Yoshizawa, H. Takata, T. Hosono, Kawasaki Heavy Industries, Japan* **127: Demonstration of Emission Control Technology for IMO NOx Tier III,** *by Y. Murayama, T. Tagai, T. Mimura, S. Goto, Niigata Power Systems, Japan*	**187: IMO Tier 3: Gas & Dual Fuel Engines as a Clean & Efficient Solution,** *by C. Christen, D. Brand, ABB Turbo Systems, Switzerland* **334: A New Sequential Turbocharging System,** *by G. Xie, Shanghai Diesel Engine Co., Ltd., China, X. Xie, Shanghai Jiao Tong University, China* **77: Study on the Variable Geometry Exhaust Manifold Turbocharging System & Other Turbocharging Systems of 8170 Marine Diesel Engine,** *by L. Shi, K. Deng, C. Wu, Shanghai Jiaotong University, China, S. Wang, Technology Center of the SAIC Motor, China* **213: Transient Performance of Three Phase Sequential Turbocharging with Unequal Size Turbochargers,** *by Y. Cui, K. Deng, Z. Zhang, Shanghai Jiao Tong University, China*
17:00	End of Technical Sessions for Tuesday			
18:30	ABB Evening			

Poster Session for Tuesday, 14th May, 2013

Session 1:

64: Effects of Charge Density & Oxygen Concentration on Thermal Efficiency & Emissions in a Heavy-Duty Diesel Engine under High Load Operations, *by W. Su, Tianjin University, China*
105: A Semi-Experimental Modeling Approach for a Large Two-Stroke Marine Diesel Engine Simulation, *by K. Kharroubi, H. Chen, Wuhan University of Technology, China*
338: High Turbocharged Four Stroke Diesel Engine Performance is Further Improved – Split Turbocharged Exhausted System, *by X. Xie, Shanghai Jiao Tong University, China, G. Xie, Shanghai Diesel Engine Co.,Ltd., China*

Session 2:

204: Dual-Fuel for Maritime Application, *by A. Rendler, Heinzmann, Germany*
295: The Effect of Miller Cycle on the Spark Ignition Combustion Gas Engine, *by S. Tavakoli, N. Ghadimi, M. Gorji, D. Domairi, G. Javadirad, DESA, Iran*
297: The Investigation of Spark Plug Position on the Spark Ignition Combustion Performance, *by N. Ghadimi, S. Tavakoli, M. Gorji, D. Domairi, G. Javadirad, DESA, Iran*
348: Development of the Gas Engine Based on AVL-Boost, *by Y. Li, L. Han, X. Ren, Henan Diesel Engine Industry, China*

Session 4:

13: Simultaneous Reduction of Fuel Consumption & Toxic Emission of Exhaust Gases of Fishing Fleet Engines, *by O. Klyus, Maritime Academy of Szczecin, Poland*
39: Sampling Method Evaluation for Measurement of Solid Particle Number Distributions from Marine Diesel Engines & Fuels, *by J. Nielsen, Marintek, Norway, S. Ushakov, Norwegian University of Science and Technology, Norway*
44: Using the Fuel Combustion Analyzer to Evaluate the Particle Number Distribution from Different Marine Fuel Qualities, *by J. Nielsen, Marintek, Norway*
121: L'Orange Fuel Injection Systems in China & Asia – Past Experience, Today's Expertise & Examples for Tomorrow's Excellence, *by M. Heller, T. Stelzer, M. Riegert, L'Orange GmbH, Germany, S. Li, Jinan Diesel Engine Co., Ltd., China*
124: Research on Upgrade of Existing Medium Speed Marine Diesel Engine for IMO Tier II, *by X. Li, R. Zhang, T. Ping, Shanghai Marine Diesel Engine Research Institute, China*
247: Research on Diesel Engine Combustion Mechanism and Simulation of Engine In-Cylinder Combustion Process, *by S. Zhou, P. Zhou, Y. Zhu, Harbin Engineering University, China*
257: Impact of Nozzle & Spray-Hole Design on Mixture Formation at Medium-Speed Diesel Engines, *by F. Pinkert, I. Najar, C. Fink, H. Harndorf, University of Rostock, Germany, C. Schmalhorst, M. Frobenius, AVL, Germany*
261: Experimental Study on the Particulate Emissions & Unregulated Emissions of DI Diesel Engine Fueled with Ethanol-Biodiesel Blended Fuel, *by L. Zhu, W. Zhang, Z. Huang, Shanghai Jiao Tong University, China*
264: Optimization of 2- Stroke Marine Diesel Engine Fuel Consumption via VIT Setting Using a Model Based Monitoring & Diagnosis Technique: On-Board Test Case, *by D. Hountalas, N. Sakellaridis, G. Zovanos, National Technical University of Athens, Greece*
309: Investigation on Combustion & Emissions Characteristics of Ethanol-Diesel, *L. Ye, P. Sun, Q. Wu, Jiangsu University, China*
310: Simulation & Analysis on Effect of Injection System Parameters to Double-Ω Combustion Chamber Performance, *by S. Wei, H. Chen, Jiangsu University, China*
314: Fuel Injection System to meet Future Requirements for Large Diesel Engines, *by Z. Gao, J. Du, B. Yin, Jiangsu University, China*
315: The Effects of Different Methanol Ratios on the Integrated Fuel Economy of a Heavy Duty Diesel Engine, *by L. Bingshan, Wuhan University of Technology, China, L. Haiyan, L. Zhiming, Z. Ke, Y. Yong, Y. Songlin, Dongfeng Motor Company, China, Y. Chunde, Tianjin University, China*
325: Emission Characteristics of Common Rail Engine Fueled with Biodiesel Fuel from Waste Cooking Oil, *by G. Mao, Z. Wang, Jiangsu University, China*

Session 10:

125: Experimental Study on the Operation Rules between Turbocharging System & 4-stroke Medium-Speed Marine Diesel Engine, *by J. Huang, Z. Yin, Y. Qiao, Jimei University, China*
353: Research on Dynamic Behavior of Ball Bearing-Rotor System with Damper for Turbocharger, *by M. Rixiu, S. Nawei, China North Engine Research Institute, China*

Final Programme for Wednesday, 15th May, 2013

Time	YuChai Room (Room A)	JiChai Room (Room B)	ABB Room (Room C)	PetroChina Room (Room D)
08:30 – 10:00	(3-1) Fundamental Engineering – Mechanics 1	(5-1) Environment, Fuel & Combustion – Gas & Dual Fuel Engines – Status & Outlook	(4-7) Environment, Fuel & Combustion – Diesel Engines – Exhaust Gas Recirculation, EGR	(9-1) Integrated Systems & Electronic Control – Piston Engines, Gas & Steam Turbines & Applications – Propulsion System Integration
	Chairman: P. Frigge, *Wärtsilä, Switzerland* Vice Chairman: E. Luo, *Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China,* M. Feng, *Shanghai Marine Diesel Engine Research Institute, China*	Chairman: A. Dijks, *KEMA, Netherlands* Vice Chairman: Z. Huang, *School of Energy and Power Engineering, Xi'an Jiaotong University, China,* K. Deng, *Shanghai Jiao Tong University, China*	Chairman: G. Stiesch, *MAN Diesel & Turbo, Germany* Vice Chairman: M. Yao, *State Key Laboratory of Engines of Tianjin University, China,* K. Li, *China FAW Group Corporation R&D Center, China*	Chairman: M.Okabe, *Mitsubishi Heavy Industries, Japan* Vice Chairman: T. Ping, *Shanghai Marine Diesel Engine Research Institute, China,* Q. Zheng, *Harbin Engineering University, China*
	419: Integrated Design, Analysis & Development Processes Applied to the Design of a High Specific Output Gas Engine Cylinder Head, *by I. Calvert, A. Zucchelli, GE Jenbacher, Austria, B. McCully, M. Krajicek, Ricardo, UK* **103: Low Vibration Design of Large Diesel & Gas Engines by Predictive Simulation,** *by M. Wyzgala, P. Boehm, D. Pinkernell, MAN Diesel & Turbo, Germany* **163: Structural Optimization Method & Low Vibration Design of HiMSEN Engine's Genset,** *by K. Jung, J. Lee, J. Son, Y. Ryoo, Hyundai Heavy Industries, Korea* **292: Global Vibration Challenges for a V12 Medium-Speed Locomotive Engines Using a Post-Turbine Mounted After Treatment System to Meet the EPA T4 Emission Standard,** *by S. Lauer, FEV, Germany*	**Short presentation of WG 17 'Gas Engines'** **277: An Updated Survey of Gas Engine Performance Development,** *by T. Callahan, K. Hoag, Southwest Research Institute, USA* **413: Current Status & Future Strategies of Gas Engine Development,** *by S. Murakami, T. Baufeld, AVL List, Austria* **191: Advanced Spark Ignition Technology for Gas-Fueled Engines & its Impacts on Combustion Stability & Performance Optimization,** *by J. Lepley, Altronic-Hoerbiger Engine Solutions, USA, A. Gschirr, Altronic-Hoerbiger Engine Solutions, Austria* **389: Valve Control Management - The Possibility of Improving Gas Engine Performance,** *by C. Mathey, ABB Turbo Systems, Switzerland*	**176: EGR System Development on MES Test Engine 4S50ME-T9,** *by T. Shirai, S. Yokobe, S. Ibaragi, Mitsui, Japan, N. Kjemtrup, MAN Diesel & Turbo, Denmark* **133: NOx Reduction by Combination of Charge Air Moisturizer & Exhaust Gas Recirculation on Medium Speed Diesel Engines,** *by H. Park, J. Park, M. Park, S. Ghal, S. Kim, Hyundai Heavy Industries, Korea* **76: Combination of Post-Injection & Cooled EGR at a Medium-Speed Diesel Engine to Comply with IMO Tier III Emission Limits,** *by M. Pueschel, B. Buchholz, FVTR Rostock GmbH, Germany, C. Fink, Rostock University, Germany, C. Rickert, K. Ruschmeyer, Caterpillar, Germany* **18: Ten Years After: Results from the Major Programme HERCULES A-B-C on Marine Engine R&D,** *by N. Kyrtatos, National Technical University of Athens, Greece, L. Hellberg, Wärtsilä, Finland, C. Poensgen, MAN Diesel & Turbo, Germany*	**Short presentation of WG 15 'Electronics and Software Systems'** **162: Benefits of Propulsion Integration on Fuel Efficiency of Marine Vessels,** *by E. Boletis, Wärtsilä, Netherlands* **235: Analysis & Evaluation of Innovative Hybrid Powertrain Architectures Combining Gas Engines & Electric Propulsion for Tugboats,** *by I. Vlaskos, D. Gagliardi , Ricardo, Germany* **146: Development of Turbo Hydraulic System on Large Marine Diesel Engine,** *by N. Sakairi, I. Tanaka, M. Kondo, A. Otsuka, K. Ohta, Mitsui, Japan* **138: Development of the Hybrid Tugboat System,** *by S. Koichi, K. Kobayashi,M. Kodera, S. Minami, Niigata Power Systems, Japan*
10:00	Coffee break			

Final Programme for Wednesday, 15th May, 2013

Time	YuChai Room (Room A)	JiChai Room (Room B)	ABB Room (Room C)	PetroChina Room (Room D)
10:30 – 12:00	(3-2) Fundamental Engineering – Mechanics 2	(5-2) Environment, Fuel & Combustion – Gas & Dual Fuel Engines – Performance & Diagnostics	(6-1) Aftertreatment – 4-Stroke Systems	(9-2) Integrated Systems & Electronic Control – Piston Engines, Gas & Steam Turbines & Applications – Automation Systems
	Chairman: U. Schlemmer-Kelling, *FEV, Germany* Vice Chairman: E. Luo, *Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China,* M. Feng, *Shanghai Marine Diesel Engine Research Institute, China*	Chairman: R. Beran, *AVL List, Austria* Vice Chairman: Z. Huang, *School of Energy and Power Engineering, Xi'an Jiaotong University, China,* K. Deng, *Shanghai Jiao Tong University, China*	Chairman: F. Wang, *Shanghai Marine Diesel Engine Research Institute, China* Vice Chairman: S. Shuai, *Department of Automotive Engineering at Tsinghua University, China,* S. Zhou, *Harbin Engineering University, China*	Chairman: E. Boletis, *Wärtsilä, Netherlands* Vice Chairman: T. Ping, *Shanghai Marine Diesel Engine Research Institute, China,* Q. Zheng, *Harbin Engineering University, China*
	164: Needle Chattering Effects in Common Rail Injectors for High Pressure Injection, *by J. Wloka, G. Wachtmeister, Technical University München, Germany* **181: An Approach for Dimensioning Case Hardened Components through Utilisation of Sophisticated Fatigue Analysis with the Finite Element Method,** *by M. Savolainen, Wärtsilä, Finland* **318: The Valve Seat Ring Interference Stress Simulation Methods in the Finite Element Modeling of the Cylinder Head Stress Analysis,** *by X. Guo, Y. Cheng, Beijing Institute of Technology, China* **414: Visualization of the Combustion in Wärtsilä 34SG Pre-Chamber Ignited Lean Burn Gas Engine,** *by J. Duong, J. Hyvonen, Wärtsilä, Finland, R. Wellander, O. Andersson, M. Richter, Lund University, Sweden*	**296: Large Gas Engines – 75 mg/mN3 NOx,** *by G. Tinschmann, A. Birgel, C. Trapp, GE Jenbacher, Austria, E. Schnessl, C. Redtenbacher , A. Wimmer , Graz University of Technology, Austria* **142: Newly Updated Combustion System for HiMSEN Gas Engine, H35/40G,** *by Y. Lee, H. Park, J. Park, K. Kim, J. Son, C. Jung, Hyundai Heavy Industries, Korea* **109: Method to Quantify & Visualize Abnormal Combustion of a SI Engine,** *by H. Snuis, MWM, Germany* **79: High-Speed Flame Chemiluminescence Investigations of Pre-Chamber-Jets in a Large-Sized Gas Engine,** *by C. Disch, P. Huegel, H. Kubach, U. Spicher, Karlsruhe Institute of Technology, Germany, J. Pfeil, MOT GmbH, Germany, B. Dirumdam, MAN Diesel & Turbo, Germany*	**212: High Performance Solutions for IMO TIER III - System Integration of Engine & Aftertreatment Technologies as Element of Success,** *by P. Steffe, M. Bugsch , R. Losher , P. Toshev, MAN Diesel & Turbo, Germany* **2: U.S. EPA Exhaust Emissions Certification of the Bombardier ALP-45DP Locomotive,** *by S. Fritz, Southwest Research Institute, USA, B. Kunz, Bombardier Transport, Switzerland, W. Sonnleitner, Bombardier Transportation GmbH, Germany* **179: Design Aspects of SCR Systems for HFO Fired Marine Diesel Engines,** *by N. Soikkeli, M. Lehikoinen, K. Ronnback, Wärtsilä, Finland* **75: Advanced Exhaust Emission Abatement – 144 MW Diesel Based Power Production with NOx, SOx, & PM Abatement – Design – Commissioning – Early Production Experience,** *by L. Ellegaard, K. Rasmussen, C. Albrechtsen, BWSC, Denmark*	**52: A Self-tuning Engine Concept,** *by F. Oestman, T. Kaas, Wärtsilä, Finland* **104: Modular Automation Platform for Efficient Integration of New Technologies & Flexible Adaption of Customer Requirements,** *by T. Brendle, J. Ammer, R. Hirt, MAN Diesel & Turbo, Germany* **205: Efficient Ship Controls Ready to Meet the Challenges of the Future,** *by N. Suedekum, A. Ruether, Bosch Rexroth, Germany* **374: Machine Test on Fuzzy-PID Control Strategy of Diesel Engine basing on Microautobox,** *by G. Liu, F. Xu, X. Zhu, Shanghai Institute of Space Propulsion, China, E. Song, Harbin Engineering University, China*
12:00	Lunch			

Final Programme for Wednesday, 15th May, 2013

Time	YuChai Room (Room A)	JiChai Room (Room B)	ABB Room (Room C)	PetroChina Room (Room D)
13:30 – 15:00	(3-3) Fundamental Engineering – Simulation	(5-3) Environment, Fuel & Combustion – Gas & Dual Fuel Engines – Abnormal Combustion	(6-2) Aftertreatment – 2-Stroke Systems	(9-3) Integrated Systems & Electronic Control – Piston Engines, Gas & Steam Turbines & Applications – Integrated Machinery Systems
	Chairman: P. Böhm, *MAN Diesel & Turbo, Germany* Vice Chairman: E. Luo, *Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China,* M. Feng, *Shanghai Marine Diesel Engine Research Institute, China*	Chairman: R. Nordrik, *Rolls-Royce Marine AS, Norway* Vice Chairman: Z. Huang, *School of Energy and Power Engineering, Xi'an Jiaotong University, China,* K. Deng, *Shanghai Jiao Tong University, China*	Chairman: K. Heim, *O.M.T., Italy* Vice Chairman: S. Shuai, *Department of Automotive Engineering at Tsinghua University, China,* S. Zhou, *Harbin Engineering University, China*	Chairman: K. Sugiura, *CMD, China* Vice Chairman: T. Ping, *Shanghai Marine Diesel Engine Research Institute, China,* Q. Zheng, *Harbin Engineering University, China*
	207: Advances & Challenges in Simulating Combustion & Emission Formation in Large Diesel Engines, *by A. Wimmer, G. Pirker, M. Engelmayer, M. Gufler, F. Chmela, Graz University of Technology, Austria, G. Hirschl, Kompetenzzentrum Das virtuelle Fahrzeug, Austria* **274: Combustion & Radiation Modeling of Laminar Premixed Flames Using OpenFOAM: A Numerical Investigation of Radiative Heat Transfer in the RADIADE Project,** *by S. Haider, K. Pang, A. Ivarsson, J. Schramm, Technical University of Denmark, Denmark* **136: Flow & Pressure Simulation of Cooling Water, Lubricating Oil & Fuel Supply Systems,** *by A. Hjort, Wärtsilä, Finland* **89: Turbulence during the Compression Stroke,** *by E. Antila, VTT, Finland, M. Nuutinen, O. Kaario, Aalto University, Finland*	**36: Understanding the Influence of Heat Transfer & Combustion Behavior on End Gas Knock in Heavy Duty Lean Burn Engines,** *by J. Hiltner, Hiltner Combustion Systems, USA* **139: Ranking the Knock Resistance of Gaseous Fuels by their Physical & Chemical Properties,** *by G. van Dijk, S. Gersen, H. Levinsky, A. Dijks, DNV KEMA Nederland, Netherlands* **37: Predicting Autoignition Caused by Lubricating Oil in Gas Engine,** *by S. Yasueda, GDEC, Japan, L. Tozzi, D. Martinez, Prometheus, USA* **185: Technical Challenge for the 2-Stroke Premixed Combustion Gas Engine,** *by T. Hirose, Diesel United Ltd., Japan, Y. Masuda, T. Yamada, Y. Umemoto, IHI Corporation, Japan, H. Furutani, National Institute of Advanced Industrial Science and Technology, Japan*	**Short presentation of WG 2 'Classification Societies'** **178: Continuous Development of Tier III SCR for Large 2-Stroke Diesel Engines,** *by H. Christensen, MAN Diesel & Turbo, Denmark* **29: Development of Marine SCR System for Large Two-Stroke Diesel Engines Complying with IMO NOx Tier III,** *by T. Fujibayashi, S. Baba, H. Tanaka, Hitachi Zosen Coporation, Japan* **188: High-Pressure SCR at Large Diesel Engines for Reliable NOx-Reduction & Compliance with IMO Tier III Standards,** *by R. Bank, B. Buchholz, FVTR, Germany, H. Harndorf, R. Rabe, U. Etzien, Rostock University, Germany*	**129: Development of NIIGATA New Gas Turbine Pump Drive Unit "CNT-4002MN",** *by S. Tarui, S. Watanabe, T. Uchino, Niigata Power Systems, Japan* **279: Modelling Marine Engine Energy Flow with Multi-Domain Simulation,** *by G. Zou, A. Kinnunen, K. Tammi, VTT, Finland, K. Tervo, ABB Marine, Finland, M. Elg, Deltamarin, Finland* **254: Carbon & Fuel Reduction at Sea & Ports – Development of a New Cogeneration Concept with Ship Engine Exhaust Heat Driven Cooling Generation/Storage System,** *by D. Wu, G. Tian, J. Heslop, T. Roskilly, University of Newcastle, UK* **141: The Bosch Electronic Diesel Control System for Medium & High Speed Engines,** *by G. Rehbichler, C. Kendlbacher, M. Bernhaupt, Robert Bosch AG, Austria*
15:00	Coffee break			

Final Programme for Wednesday, 15th May, 2013

Time	YuChai Room (Room A)	JiChai Room (Room B)	ABB Room (Room C)	PetroChina Room (Room D)
15:30 – 17:00	(3-4) Fundamental Engineering – Thermodynamics 1	(5-4) Environment, Fuel & Combustion – Gas & Dual Fuel Engines – Combustion Aspects	(6-3) Aftertreatment – Particulate Filters	(9-4) Integrated Systems & Electronic Control – Piston Engines, Gas & Steam Turbines & Applications – Energy Management & Control Systems
	Chairman: G. Weisser, *Wärtsilä, Switzerland* Vice Chairman: E. Luo, *Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China,* M. Feng, *Shanghai Marine Diesel Engine Research Institute, China*	Chairman: A. Wimmer, *Graz University of Technology, Austria* Vice Chairman: Z. Huang, *School of Energy and Power Engineering, Xi'an Jiaotong University, China,* K. Deng, *Shanghai Jiao Tong University, China*	Chairman: P. Flynn, *GE Transportation, USA* Vice Chairman: S. Shuai, *Department of Automotive Engineering at Tsinghua University, China,* S. Zhou, *Harbin Engineering University, China*	Chairman: P. Hupperich, *FEV, USA* Vice Chairman: T. Ping, *Shanghai Marine Diesel Engine Research Institute, China,* Q. Zheng, *Harbin Engineering University, China*
	91: Optimal Utilization of Air- & Fuel-Path Flexibility in Medium-Speed Diesel Engines to Achieve Superior Performance & Fuel Efficiency, *by A. Knafl, G. Stiesch, M. Auer, T. Kremser, MAN Diesel & Turbo, Germany* **363: Analysis & Optimal Design on Air Intake System of Controllable Intake Swirl Diesel,** *by G. Wang, X. Li, G. Liu, X. Yang, X. Niu, Harbin Engineering University, China* **272: Investigation of Extreme Mean Effective & Maximum Cylinder Pressures in Medium Speed Diesel Engines,** *by P. Eilts, C. Stoeber-Schmidt, Technical University Braunschweig, Germany* **173: A Fundamental Study on Improvement of Ignition Behavior of Low Ignitability Fuel with Pilot Injection,** *by S. Kawauchi, M. Takagi, National Maritime Research Institute, Japan*	**424: The MAN ME-GI Engine: From Initial System Considerations to Implementation & Performance Optimization,** *by L. Juliussen, S. Mayer, M. Kryger, MAN Diesel & Turbo, Denmark* **12: High-Pressure Natural Gas Injection (GI) Marine Engine Research with a Rapid Compression Expansion Machine,** *by D. Imhof, D. Tsuru, H. Tajima, K. Takasaki, Kyushu University, Japan* **412: Improvement of Dual-Fuel-Engine Technology for Current & Future Applications,** *by H. Mohr, T. Baufeld, AVL List, Austria* **278: Solutions for Meeting Low Emission Requirements in Large Bore Natural Gas Engines,** *by E. Sotiropoulou, L. Tozzi, Prometheus, USA, D. Lepley, Altronic-Hoerbiger, USA*	**255: Development of DPF [Diesel Particulate Filter] with a Regenerator for Marine Diesel Engines,** *by M. Tsuda, K. Maeda, D. Yamanishi, National Fisheries University, Japan* **122: Verification Testing of the L-CCRT(TM) Particulate Control System on a NREC 3GS21B Gen Set Locomotive,** *by J. Hedrick, S. Fritz, Southwest Research Institute, USA, P. Anderson, J. Ramirez, Johnson Matthey, USA* **137: Newly Developed Diesel Particulate Filter for Marine Diesel Engine – Electrostatic Cyclone DPF,** *by M. Furugen, Furugen and Makino lab. inc., Japan, H. Sasaki, T. Tsukamoto, Tokyo University of Marine Science and Technology, Japan, A. Ohashi, Z. Xu, National Maritime Research Institute, Japan* **386: Study of DPF Technology to Meet China IV Emissions Regulations,** *by D. Yulong, H. Fuchen, Z. Suying, W. Fengshuang, M. Lei, Weichai Power, China*	**183: Model-Based Techno-Economic Assessment & Optimisation of Marine Waste Heat Recovery Options,** *by N. Kakalis, G. Dimopoulos, I. Stefanatos, DNV, Greece* **263: Next Generation of Engine Control Systems,** *by A. Levchenko, Heinzmann, Germany* **87: Energy Management for Large-Bore, Medium Speed Diesel Engines,** *by R. Kudicke, Technical University München, Germany* **193: New Approach for ECS Software Development,** *by A. Hoepfner, I. Koops, A. Przymusinski, AVL Software and Functions, Germany, G. Hrauda, R. Strasser, AVL List, Austria*
17:00	End of Technical Sessions for Wednesday			

Poster Session for Wednesday, 15th May, 2013

Session 7:

42: Development of a New Electronically Controlled Cylinder Lubrication System, *by Y. He, Wuhan University of Technology, China*
80: Extending Oil Life in Natural Gas Engines, *by F. Girshick, Infineum, USA*
93: Development of Gas Engine Oils for Corrosive Gas Service, *by A. Bailey, Infineum, UK*
100: Fibre Optic Sensor for Online Monitoring of Oil Film Pressure in Engine Main Bearing, *by H. Ronkainen, M. Kapulainen, A. Hokkanen, I. Stuns, S. Varjus, R. Turunen, S. Nyyssoenen, J. Halme, VTT, Finland*
118: Energy Efficient Gas Engine Lubrication, *by K. Tellier, ExxonMobil, USA, B. Murphy, GE Energy, USA*
132: A Study on Wear Progress of Engine Bearing under Mixed Lubrication Condition, *by T. Sano, Daido Metal Co., Ltd., Japan*
322: "Black Sludge" in TPEO & Evaluating Sulfonate & Salicylate Detergents on Asphlatene Dispersancy, *by J. Piao, PetroChina Dalian Lube Oil R&D Institute, China*
383: Lubrication & Friction Mechanism Research of Laser Surface Texturing Technology on Cylinder Liner of Diesel Engine, *by B. Yin, Y. Fu, Jiangsu University, China*

Session 5:

102: Simulating the Combustion & Near-Wall Flame Extinction of a Methane Gas IC Engine by Employing a Zonal Cylinder Model, *by A. Ratzke, C. Hennecke, F. Dinkelacker, Hannover University, Germany*
145: Combustion & Exhaust Emissions Characteristics of Pilot-Ignited Engine Fueled with Digester Gas, *by E. Tomita, N. Kawahara, Y. Sunada, Okayama University, Japan, M. Kondo, Mitsui, Japan*
170: Development of an Ethanol E100 Combustion Engine, *by J. Fernandez de Landa Magarin, Dresser-Rand, Spain*

Session 4:

329: Study on Acoustic Characteristic & Noise Control Measure of Marine Diesel, *by Z. Wang, Shanghai Marine Diesel Engine Research Institute, China*
330: Influence of EGR Rate on D30 Impure DME/Diesel Engine Performance Combustion & Emissions, *by T. Wang, D. Wang, Taiyuan University of Technology, China*
336: Feasibility Research of Biomass Energy Adopted in Internal Combustion Engine, *by Z. Gao, D. Mei, Z. Wang, P. Sun, Jiangsu University, China, Y. Yuan, Nantong University, China, G. Elsbett, Guenter Elsbett Technologie, Germany*
341: Study of Simulation & Experiment on Engine Emissions with DME & Non-Standard Diesel Blended Fuels, *by X. Yuan, T. Wang, Taiyuan University of Technology, China*
343: Comparison of PM Emission from DME & Diesel Engine, *by S. Liu, J. Huang, Y. Wei, Xian Jiaotong University, China*
378: Theoretical Study & Experimental Investigation on Augment High-Pressure Common-Rail System, *by O. Guangyao, C. Hailong, Naval University of Engineering, China*
418: Exhaust Emission Control of Mitsubishi UE Diesel Engine, *by K. Imanaka, N. Hiraoka, A. Miyanagi, M. Sugihara, Mitsubishi Heavy Industries, Japan*

Session 9:

31: Modelling & Control of a Fuel Cell & Micro Gas Turbine Hybrid Power System for Ship Application, *by J. He, P. Zhou, D. Clelland, University of Strathclyde, UK*
47: The Exergy Analysis of Marine Diesel Engine Waste Heat Recovery System, *by Z. Wang, Harbin Engineering University, China*
88: The Design & Implementation of the Hardware In-The-Loop Simulation Comprehensive Test Bench of High Pressure Common Rail Electronic Control System for Large Low-Speed Marine Diesel Engine, *by Q. Wang, J. Yang, Y. Yu, Z. Wang, C. Shu, Wuhan University of Technology, China*
148: Development of Medium Speed EUP Electronically-Controlled Diesel Engines, *by K. Tsujimoto, T. Saeki, K. Kitagawa, Y. Takahata, Yanmar Co., Ltd., Japan, S. Kiechle, Woodward, Germany*
303: Development of Electronic Fuel Injection Controller of High Power Locomotive Diesel Engine, *by M. Guan, Z. Cai, S. Han, CNR, China*
319: Modeling & Simulation Research of Electro-Hydraulic Speed Governing System of Diesel Engines, *by E. Song, Harbin Engineering University, China*
377: The Study of Real-Time Simulation Model on Marine Diesel Engine, *by J. Li, CSIC, China*

Final Programme for Thursday, 16th May, 2013

Time	YuChai Room (Room A)	JiChai Room (Room B)	ABB Room (Room C)	PetroChina Room (Room D)
08:30 – 10:00	(3-5) Fundamental Engineering – Thermodynamics 2	(11-1) Users' Aspects – Marine Application – Service Experience	(6-4) Aftertreatment – SCR Experience	(8-3) Component & Maintenance Technology – Filter & Crankshaft Development
	Chairman: S. Pischinger, *FEV, Germany* Vice Chairman: E. Luo, *Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China,* M. Feng, *Shanghai Marine Diesel Engine Research Institute, China*	Chairman: E. Gust, *Zollern BHW, Germany* Vice Chairman: Y. Huang, *Naval University of Engineering, China,* Z. Ji, *School of Power and Energy Engineering, Harbin Engineering University, China*	Chairman: M. Troberg, *Wärtsilä, Italy* Vice Chairman: S. Shuai, *Department of Automotive Engineering at Tsinghua University, China,* S. Zhou, *Harbin Engineering University, China*	Chairman: Y. Itoh, *Niigata Power Systems, Japan* Vice Chairman: H. Feng, *Beijing Institute Of Technology, China*
	248: Hydraulic Measures to Improve Common-Rail Injection System Performance – Impact of Injection Rate Shaping on Emissions of a Medium Speed Diesel Engine, *by C. Fink, J. Rabe, H. Harndorf, University of Rostock, Germany, M. Drescher, FVTR Rostock, Germany* **379: Research on Heat Transfer Performance & Temperature Field Inspection Methods of Cylinder Head,** *by Z. Ping, O. Guangyao, L. Qi, Naval University of Engineering, China, L. Jianming, Troop of Navy, China* **110: Acoustic Source Characterization of Medium Speed IC-Engine Exhaust System,** *by A. Hynninen, VTT, Finland, M. Abom, H. Boden, KTH Stockholm, Sweden, E. Nousiainen, M. Aura, Wärtsilä, Finland* **339: The Effect of Piston Structure Parameters on the Lub-Oil Consumption,** *by J. Lei, X. Yu, Z. Liu, Zhejiang University, China, J. Wen, Chendu Galaxy Power Co. Ltd., China, L. Shen, Kunming University of Science and Technology, China*	**6: Service Experience of MAN B&W Two Stroke Diesel Engines – An Update,** *by S. Jakobsen, MAN Diesel & Turbo, Denmark* **276: Diesel Engines Optimisation & Fuel Savings,** *by M. Karlsson, Stolt Tankers BV, Netherlands* **166: Design & Field Experience of Hyundai–Wärtsilä 2-Stroke RT82 Family Engine,** *by J. Kim, B. Kim, J. Han, B. Kim, J. Kim, Hyundai Heavy Industries, Korea* **404: Condition Based Maintenance of the 2-Stroke Propulsion Engine,** *by O. Toft, BW Fleet Management, Norway, H. Rolsted, MAN Diesel & Turbo, Denmark, P. Samuelsson, Federal Mogul, Sweden*	**107: Testing SCR in High Sulphur Application,** *by K. Lehtoranta, R. Turunen, H. Vesala, S. Nyyssoenen, VTT, Finland, N. Soikkeli, L. Esselstroem, Wärtsilä, Finland* **220: Field Experience of Marine SCR,** *by J. Briggs, J. McCarney, IACS, UK* **5: First Operational Experiences with a Combined Dry Desulphurization Plant & SCR Unit Downstream of a HFO Fueled Marine Engine,** *by R. Juergens, Couple Systems, Germany* **172: Urea-SCR System for Pollution Control in Marine Diesel Engines,** *by Y. Izumi, IHI Corporation, Japan*	**Short presentation of WG 4 'Crankshaft Rules'** **199: Influence of Filtration on Component Lifetime of Common Rail Injection Systems,** *by S. Schmitz, Boll+Kirch Filterbau GmbH, Germany* **422: Fatigue Strength of Super Clean Solid Type Crankshafts,** *by R. Yakura, T. Shinozaki, H. Mori, N. Fujitsuna, M. Matsuda, Kobe Steel Ltd., Japan, T. Sakai, A. Ueno, S. Kikuchi, T. Miura, Ritsumeikan University, Japan* **150: Adjustable Tuned Mass Damper Concept for Diesel Generator,** *by J. Keinaenen, K. Tammi, H. Sainio, VTT, Finland, A. Maekinen, P. Paloheimo, ABB, Finland* **245: On the Design of a Single Cylinder Engine for Enhanced Functional & Reliability Validation,** *by S. Brewster, Ricardo, M. Weinrotter, A. Larralde, I. Iruretagoiena, Guascor Power, Spain, C. Burrell, Ricardo, Czech Republic*
10:00	Coffee break			

Final Programme for Thursday, 16th May, 2013

Time	YuChai Room (Room A)	JiChai Room (Room B)	ABB Room (Room C)	PetroChina Room (Room D)
10:30 – 12:00	(3-6) Fundamental Engineering – Engine Development, Modelling, Simulation	(11-2) Users' Aspects – Marine Application – Energy Efficiency	(6-5) Aftertreatment – Specific Aspects	(8-4) Component & Maintenance Technology – Liner Rings
	Chairman: M. Larmi, *Aalto University, Finland* Vice Chairman: E. Luo, *Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China,* M. Feng, *Shanghai Marine Diesel Engine Research Institute, China*	Chairman: A. Wang, *ABB Turbo Systems, China* Vice Chairman: Y. Huang, *Naval University of Engineering, China,* Z. Ji, *School of Power and Energy Engineering, Harbin Engineering University, China*	Chairman: H. Mohr, *AVL List, Austria* Vice Chairman: S. Shuai, *Department of Automotive Engineering at Tsinghua University, China,* S. Zhou, *Harbin Engineering University, China*	Chairman: F. Cantow, *Federal Mogul, Germany* Vice Chairman: H. Feng, *Beijing Institute Of Technology, China*
	35: 4-Stroke Opposed-Piston-Diesel-Engine with Controlled Shift-Liners for Optimized Scavenging, Low Heat Losses & Improved Thermal Efficiency, *by G. Elsbett, Guenter Elsbett Technologie, Germany, Z. Gao, Z. Wang, P. Sun, D. Mei, Jiangsu University, China* **154: Application of a Sensor System Based on Linear Raman Scattering for In-Situ Determination of Mixture Composition of Natural Gas at the Supply Line of a Dual Fuel Driven Diesel Engine,** *by S. Eichmann, Erlangen University, Germany, T. Seeger, S. Schlüter, Siegen University, Germany, J. Hult, M. Kryger, MAN Diesel & Turbo, Denmark* **416: Structural Vibration Challenges of Marine Diesel & Gas Engines,** *by H. Solbakken, T. Eide, R. Nordrik, Rolls-Royce Bergen Engines AS, Norway* **126: The New FEV Single Cylinder Engine Family, the Efficient Tool for Engine Development,** *by E. Reichert, R. Stohr, T. Koch, T. Hamm, S. Lauer, FEV, Germanyz*	**Short presentation of WG 10 'Users'** **51: Onboard Fuel Oil Cleaning, the Ever Neglected Process How to Restrain Increasing Cat-fine Damages in Two-Stroke Marine Engines,** *by H. Rolsted, MAN Diesel & Turbo, Denmark, C. Rojgaard, DNV, Singapore, O. Jensen, NanoNord, Denmark, M. Englund, Alfa Laval Tumba AB, Sweden* **117: Propulsion System (Dis)Integration,** *by P. Kloppenburg, Techno Fysica, Netherlands* **32: Systematic Evaluation of Performance of VLCC Engine, Comparing Service Monitored Data & Thermodynamic Model Predictions,** *by N. Kyrtatos, S. Glaros, E. Tzanos, National Technical University of Athens, Greece, S. Hatzigrigoris, F. Dalmyras, MARAN Tankers, Greece* **4: Energy Efficient Hydraulic Systems for Large Engines,** *by S. Fischer, Bosch Rexroth, Germany*	**7: Aftertreatment Systems for Marine Applications: Practical Experience from the Perspective of a Classification Society,** *by F. Kock, Germanischer Lloyd, Germany* **396: Simulation Based Development of the SCR Spray Preparation for Large Diesel Engines,** *by M. Frobenius, C. Schmalhorst, R. Fiereder, AVL, Germany, C. Rickert, J. Dreves, Caterpillar, Germany* **147: Emission Monitoring – Development of Predictive Emission Monitoring,** *by J. Torrkulla, M. Loevholm, Wärtsilä, Finland* **153: Total Marine Diesel Emission Control Technology Using Nonthermal Plasma Hybrid Process,** *by M. Okubo, T. Kuwahara, K. Yoshida, M. Kawai, T. Kuroki, Osaka Prefecture University, Japan, K. Hanamoto, K. Sato, Daihatsu, Japan*	**430: SUMEBore – The Powder Based Cylinder Running Surface Coating Solution Contributing to Emission Reduction,** *by B. Distler, P. Ernst, Sulzer Metco AG, Switzerland* **33: Challenges for Cylinder Liner Development & How to Overcome These,** *by P. Ronnedal, MAN Diesel & Turbo, Denmark* **149: Development of New Generation Long Life Piston Ring Coating for 2 Stroke Large Bore Marine Diesel Engines,** *by Y. Saito, IHI Corporation, Japan* **367: Design Optimization in the Solution of Piston Ring Sticking and Carbon Deposit,** *by L. Zhu, Weichai Power, China*

Final Programme for Thursday, 16th May, 2013

12:00	Lunch
13:30 – 14:30	**Special Collin Trust Lecture[1]: "Sources of Energy from a Chinese Viewpoint"** by Prof. Dr. Li Jinghai, *Vice President of the Chinese Academy of Sciences, China* **Presentation of the Collin Trust Lecture Award,** by Kurt Olsson, *Vice Chairman of the Collin Trust*
14:30 – 16:00	**Final Panel Discussion: "Large Bore Engines in the Light of Changing Fuels"** Chairman: Karl Wojik, *AVL, Austria* **Panelists:** L. Casarosa, *DNV, Singapore,* J. Erdtmann, N*SB Niederelbe, Germany,* P. Flynn, *GE Transportation, USA,* O. L. Hwa, *Shell, Netherlands,* S. Jensen, *MAN, Denmark* P. Tonon, *Wärtsilä, Italy*
16:00	End of Technical Sessions for Thursday
18:30	Gala Dinner Party

[1] The Trust was set up 20 years ago by Prof. Lars Collin to broadcast information about the conversion of any type of fuel to energy for marine and rail transport and for power generation. More details are available at www.collintrust.com

Poster Session for Thursday, 16th May, 2013

Session 3:

123: Simulation Study on the Overall Performance Optimization for 4190 Series Marine Diesel Engine Based on AVL Boost Software, *by J. Huang, Y. Qiao, Z. Yin, Jimei University, China*
246: The Influence of Intake Charge Temperature on Combustion & Emissions of Dual-Fuel HCCI Combustion Engines, *by M. Fathi, M. Mirsalim, DESA, Iran, R. Khoshbakhti Saray, Sahand University of Technology, Iran*
293: Comparison of Torsional Vibration Measurement Techniques, *by W. Hendricx, K. Janssens, L. Britte, LMS International, Belgium*
340: Influence Factors on Preload Deformation & Structure of Cylinder Line, *by Y. Bi, L. Shen, J. Lei, D. Jia, Y. Xu, Kunming University, China*
360: Experimental Study on the Method for T.D.C. Determination of a Medium Speed Marine Diesel Engine, *by X. Wu, H. Zhang, L. Ren, Y. Tian, F. Gu, Shanghai Marine Diesel Engine Research Institute, China*

Session 11:

218: An Attempt to Recompute ECN in the FCA Instrument, *by L. Vedala, S. Chandrasekharan, R. Visweswaran, Viswa Lab, USA*
316: Active Vibration Isolation for a Diesel Engine Generator in Marine Application, *by T. Yang, J. Du, M. Zhu, X. Liu, Z. Liu, Harbin Engineering University, China*
415: Shipping under Hard Pressure in Challenging, *by J. Erdtmann, NSB Niederelbe, Germany*

Session 6:

17: Numerical Simulation on Spray Atomization Characteristics & Mixing Performances for SCR System in a Marine Diesel, *by Z. Yuanqing, Z. Song, Harbin Engineering University, China, G. Lin, Jiangsu Nuclear Power Corporation, China*
41: Investigation on Marine Exhaust Gas Desulfurization by Seawater Scrubbing, *by W. Dong, Harbin Engineering University, China*
167: Selective Catalytic Reduction of NOx with NH3 over Ti0.9M0.1O2-δ Nanocomposites Catalysts Prepared *by Solution Combustion Synthesis, by B. Guan, H. Lin, L. Zhong, W. Dong, Z. Huang, Shanghai Jiao Tong University, China*
300: Experiment & Modeling of Urea Spray Impingement & Deposit for Diesel SCR, *by L. Hua, T. Tang, Y. Zhao, S. Shuai, Tsinghua University, China*
304: Effects of Particulate Oxidation Catalyst on Particulate Matter emitted from Diesel Engine, *by X. Feng, Y. Ge, X. Han, L. Hao, J. Tan, L. Yu, J. Guo, Beijing Institute of Technology, China*

Session 8:

20: Development & Application of a Monitoring & Fault Diagnosis System for Marine Diesel Engines, *by Y. Yu, J. Yang, Wuhan University of Technology, China*
140: A Method for Determination of Filter Blocking Tendency of Residual Bunker Fuels, *by S. Ghosh, A. Talukder, R. Visweswaran, Viswa Lab, USA*
217: Clean Energy with DUAP Fuel Injection – Results & Further Developments, *by M. Gutierrez, A. Marti, E. Vogt, Duap AG, Switzerland*
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346: Evolution & Characterization of the Friction Condition Transition of Chrome-Plated Cylinder Liner & Two Typical Piston Rings, *by W. Jianping, China North Engine Research Institute, China*
428: The new machining method of connecting rod spherical surface, *by X. Rongrong, D. Zongjiang, X. Shao, X. Hou, P. Zhou, Ningbo China*

Session 12:

305: Study of Total Energy Utilizing for Biogas Power Generation-Cogeneration based on the Energy Efficiency Analysis, *by S. Li, CNPC Jichai Power Equipment Company, China, S. Bai, Q. Zhang, G. Li, Shandong University, China*

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Guangxi Yuchai Machinery Co., Ltd.

Guangxi Yuchai Machinery Co., Ltd, located in Yulin City, which is well known as "Jade in South of Five Ridges", and founded in 1951; it was restructured as a share-holding enterprise in 1992, and again restructured into a Sino-foreign joint venture share-holding enterprise in 1993. In 1994, Yuchai international stock was officially listed in New York Stock Exchange (NYSE stock code: CYD). Yuchai has over 9000 sets of major production equipment, with a total asset of RMB8.035 billion and a net asset of RMB4.083 billion. The annual engine production capacity is over 800,000 units.

Yuchai's main products cover six major areas such as truck, bus, passenger vehicle, construction machinery, agricultural machinery, power generator& gensets and marine, involving 15 engine series with 12 - 880kW power, covering heavy, medium and light-duty engine. Full product families are up to Euro 4 emission standard, and some products are up to Euro 5 Euro 6emission standard. Yuchai has established 45 offices and more than 3,000 service outlets at home and abroad, has developed a market outlook of customer win-win, follows up products actively, and offers domestic and overseas customers most professional, prompt and satisfactory services through the YCSS service information management system and the call center with 45 operators.

Yuchai boasts a high-caliber research team of nearly 1,200 researchers, including five enjoying the special allowance of the State Council, 28 doctors and 201 masters, as well as more than 680 staff members with intermediate and senior titles. The expert committee has retained more than 30 experts, including two academicians and eight professor-level experts, the specialized technicians with undergraduate degree account for 61%, and the personnel with intermediate and senior professional titles account for 30% and young technicians account for 70%, thus constituting a team of specialized technical talents full with vigor and strong strength.

CIMAC Congress 2013, Shanghai

May 13th – May 16th

Modifications of Full Papers at Short Notice

The technical content of the following Full Papers has been modified. Please note that the updated versions of these papers will be available only via the CIMAC homepage, after the Congress.

4: Energy Efficient Hydraulic Systems for Large Engines, *by S. Fischer, Bosch Rexroth, Germany*

217: Clean Energy with DUAP Fuel Injection - Results and Further Developments, *by M. Gutierrez, DUAP, Switzerland*

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Ao.Univ.-Prof. Dr. Andreas Wimmer,
LEC - Large Engines Competence Center, Austria

Thomas Winter,
MAN Diesel & Turbo SE, Germany

Exhibition

The CIMAC Congress is one of the most important international events in the field of large diesel and gas engines, including turbine applications. The exhibition will make up the central part of the Congress and will contribute to communication within the industry.

Both the exhibition and Congress will be held in Shanghai Exhibition Center. The exhibition is on both first and second floor of Hall W1 and Hall E1. For details about exhibition, please refer to Onsite Guide in your congress bag.

The net exhibition area occupies about 3000 m^2 of floorage. Entrance to the exhibition is free of charge for all delegates, and coffee/tea will be served in the exhibition area during all breaks.

For further information on the exhibition and registration, please refer to the webpage: www.cimac.com under Congress 2013.

Exhibition Opening Times

Monday	13th May	09:00 – 16:30
Tuesday	14th May	09:00 – 16:30
Wednesday	15th May	09:00 – 16:30
Thursday	16th May	09:00 – 14:30

List of Exhibitors

Company	Country	Booth No.
ABB Turbo Systems Ltd.	Switzerland	W5003
AAF France	France	E5004
Anhui Jianghuai Automobile Co., Ltd Engine Company	China	E9011
Anhui TianLi Engine Co., Ltd	China	E9006
AVAT Automation GmbH	Germany	W4011
AVL LIST GmbH	Austria	W8019
BAIC Motor Powertrain Co., Ltd	China	E8001
Cambustion LTD.	UK	W8026
CD-adapco	UK	E6004
Changchai Company Ltd.	China	E8003
Chevron Oronite Company LLC.	Netherlands	W4013
Chris-Marine	Sweden	W4015
CNPC Jichai Power Equipment Company	China	E8032
CNR (DALIAN) DIESEL ENGINE CO., LTD	China	E7001
Diesel & Gas Turbine Worldwide	US	E6017
DUAP Ltd	Switzerland	W6007
FAW Jiefang Automotive Co., Ltd. Wuxi Diesel Engine Works	China	E8024
Federal Mogul Burscheid GmbH	Germany	W6016
FEV GmbH	Germany	W6003
GEA Industrial Heat Exchanger Systems (China) Co., Ltd	China	W2007
Geislinger GmbH	Austria	W6004
Guangxi Yuchai Machinery CO., Ltd	China	W3001
Guangzhou Diesel Engine Factory Co., Ltd.	China	E6007
Hans Jensen Lubricators A/S	Denmark	W4012
Harbin Engineering University (HEU) College of Power and Energy Engineering	China	E1510
Heinzmann GmbH & Co., KG	Germany	W6021
HOERBIGER	China	W4003
Honeywell	Switzerland	E6016
HBM Test and Measurement	Germany	E5001

List of Exhibitors

Company Name	Country	Booth No.
IDAJ-China Co., Ltd	China	W4006
IMES GmbH	Germany	W4007
Infineum	UK	W4001
Institute of Internal Combustion Engine, Shang hai Jiao Tong University	China	E1502
Institute of Power Machinery and Vehicular Engineering at Zhejiang University	China	E1509
Jaquet Technology Group	Switzerland	W4004
KS Kolbenschmidt GmbH	Germany	W6009
Kistler Instrumente AG	Switzerland	E5011
Kompressorenbau Bannewitz GmbH	Germany	W4016
Kunming Yunnei Power Co., Ltd.	China	W8005
LEUTERT	Germany	W6017
LMS International N.V.	Belgium	E5006
L'Orange GmbH	Germany	W6008
M. Jürgensen GmbH & Co KG	Germany	W6009
Man Diesel & Turbo	Denmark	W6001
Marine Propulstion & Auxiliary Machinery	UK	W6018
Märkisches Werk GmbH	Germany	W6005
MIBA Bearing Group	China	W6010
Mitsubishi Heavy Industries Ltd.	Japan	W2015
MTU Friedrichshafen GmbH	Germany	W6020
NANONORD A/S	Denmark	E6001
National Instruments Corporation	US	E6011
Niigata Power Systems Co., Ltd	Japan	W4010
NORTH GENERAL POWER GROUP	China	E8005
NOVA WERKE AG	Switzerland	W6019
O.M.T. OFFICINE MECCANICHE TORINO SpA	Italy	W4008
Peter Fuchs Technology Group AG	Switzerland	W6011
Petrochina Lubricant Company	China	E5008
Ricardo Shanghai Co., Ltd.	China	E9001
School of Auntomotive Studies Tongji University	China	E1503

List of Exhibitors

Company Name	Country	Booth No.
Shandong Binzhou Bohai Piston co., Ltd	China	E6006
Shanghai Diesel Engine Co., Ltd.	China	E8030
Shanghai Golston Shipping Fitting Co., Ltd.	China	E6012
SHANGHAI MARINE DIESEL ENGINE RESEARCH INSTITUTE	China	E6008
Shanghai Tonghe Marine Equipment Ltd.	China	E6020
SIKA China office	China	E6018
SINOFLOW ENGINE TECHNOLOGY CO., LTD.	China	E6002
State Key Laboratory of Automotive Safety and Energy Tsinghua University	China	E1508
State Key Laboratory of Engines (Tianjin University)	China	E1505
TAIYUAN UNIVERSITY OF TECHNOLOGY	China	E1507
TAIZHOU SAITE FLUID CONTROL Co., LTD	China	E5012
TORCH SPARK PLUG Co., LTD.	China	E5010
Wärtsilä Corporation	Finland	W8001
Weichai Power Co., Ltd.	China	E4008
Woodward Incorporated	US	W8003
Wuhu YongYu Autocar Industrial Co., Ltd	China	E6015
WuXi Fuel Injection Research Institute, FAW, China	China	E8009
Wuxi KIPOR Machinery CO., LTD.	China	W8021
YICHANG MARINE DIESEL ENGINE CO., LTD	China	E5009
Yuhuan CNC Machine Tool Co., Ltd.	China	E8007
Zhenjiang CME Co., Ltd.	China	E5007
ZYNP CORPORATION	China	E6021

Optional Tour Tuesday, 14th May, 2013

Shanghai is in the east of China. It has an area of about 6,340 square kilometers. Due to its rapid growth over the last two decades it has again become a global city, exerting influence over finance, commerce, fashion, technology and culture. Below you will find two traveling routes.

The start-point for all the tours is the Fountain Square.

The prices are quoted in RMB/per person and may be subject to change for reasons beyond the control of the Congress Secretariat (Shanghai Shenshi Exhibition Service).

Ancient Town of Zhujiajiao
Tuesday 14th May (10:00-16:00)

Known as the "Venice in Shanghai", it is a well-preserved waterside ancient town. It was already a country fair as early as the Warring States Period, 1,700 years ago. During the Wanli years of the Ming Dynasty (1573-1617), with merchants flocking to the place and a growing population, it had become a prosperous town. There, we can still see the traces of the antique markets and streets of the Ming and Qing Dynasties.

The antique buildings and simple life-style of the town's people will give visitors a feeling of peace and rest.

Price per person RMB 380 including bus/guide and Lunch. The trip starts from the Fountain Square outside.

Optional Tour Wednesday, 15th May, 2013

Yuyuan Garden
Wednesday 15th May (10:00-16:00)

A famous classical garden in south China, it was once famed as the “top beauty in southeast China”. First built during Ming Dynasty, 400 years ago, by a Sichuan minister of finance named Pan Yunduan, it has been several times renovated by the government since the Liberation and is now one the key relic sites in the country under state protection. The garden is divided into the scenic sections of “Mountains and Forests in the City”, “Magnificent Woods and Beautiful Valleys”, “Historical Relics of Heralding Spring”, “Water and Rockery Scenery”, “Top in the World” and the “Inner Garden”.

Price per person RMB 380 including bus/guide and Lunch. The trip starts from the Fountain Square outside.

Technical Tours Friday, 17th May, 2013

Excursion to Shanghai VOLKSWAGEN

Volkswagen has been active in China since 1984. Today, the group has 14 representative companies in the country, undertaking parts delivery and service provision for both customers and industry in addition to vehicle production.

Shanghai Auto Museum, the first dedicated auto museum in China, is located in the Auto Expo Park of Shanghai International Automobile City. The museum covers an area of 28,000 m^2, and its exhibition area exceeds 10,000 m^2.

Schedule

08:30	Departure by bus from JC Mandarin Hotel
09:30	Arrival at Volkswagen in Anting. Welcome and tour
11:30	Lunch
13:00	Arrival at Shanghai Auto Museum
13:10	Guided tour and presentation
15:30	Departure by bus
16:30	Arrival at JC Mandarin Hotel

Price per person RMB 500 incl. bus, lunch, entrance ticket, tour guide.

Excursion to CSSC-MES Diesel Co., Ltd

CSSC - MES Diesel Co., Ltd. is a company which manufactures high-power low speed marine diesel engines. The company is located in heavy equipment industrial zone of Shanghai Lingang town, covers an area of nearly 400,000 m^2.

Local Sightseeing at Nanhui. Shuyuan Village-converted by the original villages of farmers' houses into unique style of residential areas. Visitors can pound rice in a mortar, pedal water-wheel, pick vegetables. It is a real good place to feel the traditional agricultural practices.

Schedule

08:30	Departure by bus from JC Mandarin Hotel
09:30	Arrival at CSSC-MES Diesel Co., Ltd. Welcome and tour
12:00	Lunch
13:30	Shuyuan Village sightseeing
15:30	Departure by bus
16:30	Arrival at JC Mandarin Hotel

Price per person RMB 500 incl. bus, lunch, entrance ticket, tour guide.

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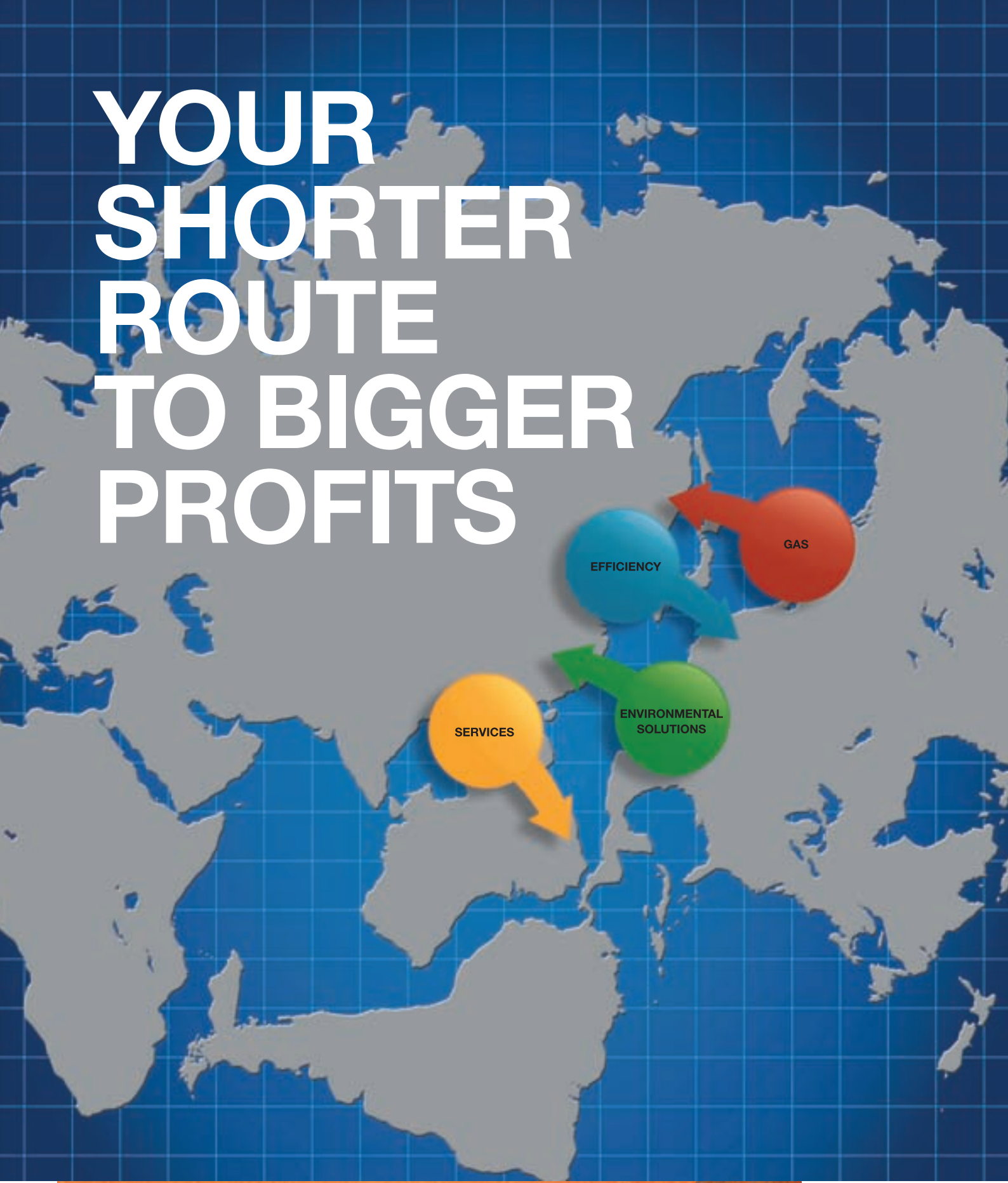

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WÄRTSILÄ

Technical Tours Friday, 17th May, 2013

Excursion to Wärtsilä Qiyao Diesel Company Ltd., Shanghai

Wärtsilä Qiyao Diesel Company Ltd., Shanghai (WQDC) is a joint venture between Wärtsilä Corporation and SMDERI (Shanghai Marine Diesel Engine Research Institute), an affiliate of CSIC (China Shipbuilding Industry Corporation) located in Lingang Industry Zone in Shanghai in Nanhui district.

China Maritime Museum is the only International maritime museum approved by the State Council of PRC and jointly built by the Ministry of Transport of China and Shanghai Municipal Peoples' Government.

Schedule

08:30	Departure by bus from JC Mandarin Hotel
09:30	Arrival at WQDC. Welcome and tour.
11:30	Lunch
13:30	Arrival at Marine Museum
15:30	Departure by bus
16:30	Arrival at JC Mandarin Hotel

Price per person RMB 500 incl. bus, lunch, entrance ticket, tour guide.

Optional Pre and Post Congress Tours

Explore the beautiful China Scene!

China is situated in the eastern part of the Asian continent on the western coast of the Pacific. Land area of about 9.6 million square kilometers. It is a large country with so many different landscape. Spring Tour will offer you the best service for you to enjoy the traveling.

Beijing City

Beijing is the cultural and political capital of the People's Republic of China. This ancient city has remained a constant throughout the many incarnations of the Chinese nation, a history stretching back over 5000 years.

The Palace Museum, known as the Forbidden City in the West, was the imperial palaces of the Ming and Qing dynasties. In early 15th century, large-scale construction involved 100,000 artisans and one million civilians. The Forbidden City is a national architectural treasure. The palace is the largest piece of ancient Chinese architecture still standing some of the buildings were damaged by lighting and rebuilt in the Ming and Qing dynasties. The palace had been expanded several times, but the original layout was preserved.

Round trip from Shanghai (four-days): Price per person RMB 4000.*

Hangzhou City

Hangzhou was founded approximately 2,200 years ago during the Qin Dynasty and is counted among the Seven Ancient Capitals of China. Marco Polo wrote that the city was undoubtedly the noblest and finest city in the world at the time. With its famous natural beauty and cultural heritage, it is one of China's most important tourist destinations. The West Lake, Longjing tea plantations, tasty local cuisine, and good shopping all make a trip to the city worthwhile.

Round trip from Shanghai (two-days): Price per person RMB 1040*

Guilin City

Guilin is one of China's most attractive urban areas. Situated in the heart of Guangxi Zhuang Autonymous region, this pleasant city is a perfect base from which to enjoy south China's stunning natural scenery.

This region's characteristic limestone karst landscape draws visitors from all over the world. They are easily accessible by bike or river boat cruise from the urban centre of Guilin.

Round trip from Shanghai (four-days): Price per person RMB 3880*

Chengdu City

The capital of Sichuan province, Chengdu is home to 15 million people and is one of Western China's fastest growing economicies. In the West, Chengdu is best known for its adorable giant pandas; of the 1,500 currently in existence, 80 percent are in Sichuan province. The city is packed with rich history and culture, and you'll need a few days to explore all it has to offer. There are a number of beautiful, intricately designed monasteries and temples, including Wenshu Monastery, which dates back 1,300 years. The city's winter is short and mild, and summers are only somewhat hot and humid, making Chengdu the ideal year-round destination.

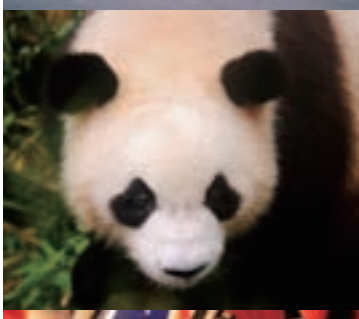
Round trip from Shanghai (three-days): Price per person RMB 4100.*

Note*:
The prices are only for reference.

Booking and More Information:
For booking and more information about these or other round trips in China visit www.chinaspringtour.com.

China

The People's Republic of China, commonly known as China, is located in East Asia, is the most populous country in the world, with a 1.3 billion citizens. China is made of 56 distinct ethnic groups, with Han Chinese making the 92% of its whole population. It exercises jurisdiction over 22 provinces, five autonomous regions, four direct-controlled municipalities (Beijing, Tianjin, Shanghai, and Chongqing), and two mostly self-governing special administrative regions (Hong Kong and Macau). Covering approximately 9.6 million square kilometers, China is the world's second largest country by land area.



China is one of the world oldest civilizations, dating back more than 5,000 years and ruled by successive dynasties until 1912. During these times, many great discoveries in fields of science and technology were made, including the inventions of printing, paper, gun powder and compass. This period also saw the construction of many landmarks, such as the Great Wall which stretches over 4000 miles, equals to 30 return travels from London to Paris. After a period of foreign occupation and civil war, the Communist Party of China led by Mao gained control of mainland China in 1949 and established People's Republic of China. The modern China today is as much shaped by its past as its rapidly looking to the future.

Since the introduction of economic reforms in 1978, China's economy has grown 90 times bigger and become the world's fastest-growing major economy. China is also the world's largest exporter and second-largest importer of goods. It now has the world's second largest GDP at about 6 trillion US dollars, 40% of the United States.

China covers a large territory and has many nationalities, each region has its own local specialties with different but fantastic and mouthwatering flavor which the Chinese are often keen to introduce to others. Since China's local dishes have their own typical characteristics, generally, Chinese food can be roughly divided into eight regional cuisines, which has been widely accepted around. Certainly, there are many other local cuisines that are famous, such as Beijing Cuisine and Shanghai Cuisine. Chinese food is popularly healthy and often beautifully presented. Texture, flavor, color and aroma are key considerations for all Chinese cookings.

FACTS & FIGURES

General data:	
Capital	Beijing
National Day	1st October
Largest city	Shanghai
Language	Mandarin Chinese
Currency	Renminbi (yuan)
	(CNY)
International Dialing Code	+86
Time Zone	China Standard Time (UTC+8)
Religion	Han 91.51%
	Other 8.49%
Drives on the	Right, except for Hong Kong & Macau

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Shanghai

Shanghai, with a population of 23 million, is not only the largest city in China, but also one of economic, financial, trade as well as communication centers in the world. Also, Shanghai is China's outstanding tourist city, a well-known city in history and culture, and the financial, trade and shopping center. Thus, Shanghai has become a first stop in China for most overseas visitors. Shanghai's public transportation has developed rapidly with metro stations and public bus stops in almost every corner of Shanghai.

The architecture in Shanghai is another landscape. The Bund, Shikumen house and various Shanghai-styles buildings, modern facilities represent all kinds of architecture styles, which are the products of the combination of Shanghai local culture and foreign culture.

In Shanghai, you can go to the luxury shopping malls to enjoy the attentive service and all great brands of the world. Or you prefer to wander at the streets and lanes to seek the appealing fashion stores. The dazzling antiques and painting make the visitors to have a full taste of the abundance and magnificence of China folk arts.

Besides the creative Shanghai flavors, the different cuisines from the other parts of China and most parts the world can be found in Shanghai. Eating in Shanghai is not only about enjoying delicious food, but also it's a social and culture experience. The fine-dining restaurant located in the European style buildings along the Bund, known as, "The Expo of World Architectures". The combination of historical architecture and delicious flavors enrich the intension of "Eating in Shanghai" greatly.

Night-time in Shanghai is full of color. You can enjoy this dynamic, metropolitan city from an observatory of an iconic building to get a bird's eye view of Shanghai at night, cruising at night along the Huangpu River, wandering at Xintiandi, or entering theatre to enjoy the new multimedia acrobatic show "ERA" and the operas and ballets presented by world famous troupes. These are all good choices.

Since Shanghai World Expo, Shanghai's tourism facilities have been more complete, and is trying to become a world famous tourist city. The people in Shanghai warmly welcome tourists from home and abroad.

Shanghai City Sightseeing Bus

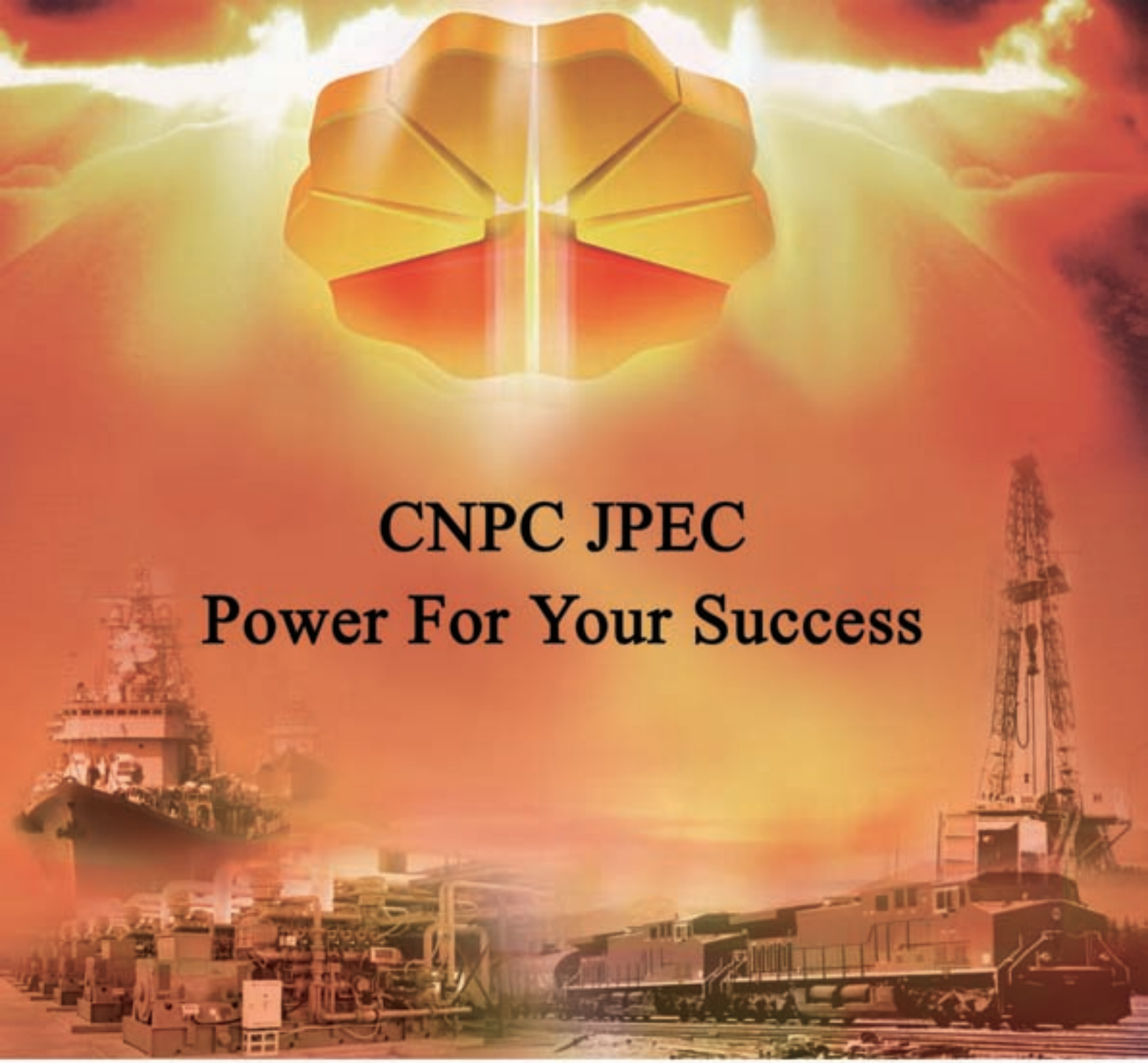
Shanghai City Sightseeing Bus has two lines and both start from the Urban Planning Exhibition Hall.

Line 1 is for Puxi Tours which passes East Nanjing Road Pedestrian Street, the Bund, Garden Bridge, Yu yuan Garden, Xintiandi and Shanghai Museum.

Line 2 is for Pudong Tours which passes Oriental Pearl TV Tower and the Jinmao Tower.

The one day pass for Shanghai City tours is a magnetic card and the price is RMB 30. Each card allows an extra child who is below 1.4 meters. The card is valid for 24 hours after the first use and visitors can hop on and off randomly at any station during the operating hours.

There are also free headsets for use which provide the introduction of the views in eight languages, which are Chinese, English, Japanese, French, Spanish, German, Russian and Korean.



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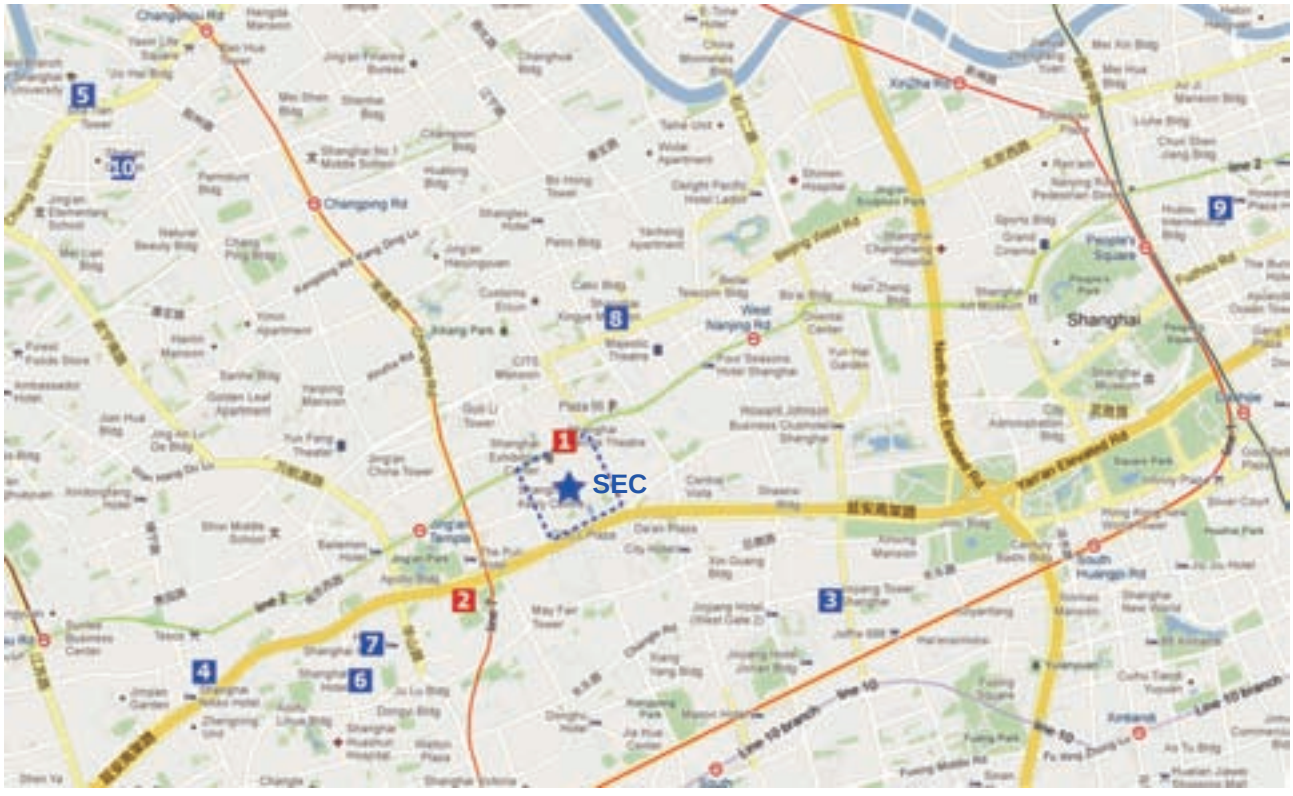
CNPC Jichai Power Equipment Company is the only manufacturer that won the National Gold Prize Medal of large power engine and is the only power production enterprise in China Petroleum Industry. The main business of Jichai is R & D and manufacturing of internal-combustion engine, compressor, hydraulic transmission product and engine electrical control device. Selling and service business is included as well. Series products power range of internal combustion engines covers from 30 to 9000kW and that of compressors from 85 to 3500kW. Jichai products have been widely used in oil drilling, marine power, power stations, locomotives, construction equipment, military etc. and cover all domestic oil and gas fields and 32 provinces, autonomous regions, municipalities, Hong Kong, Macao and Taiwan, export to nearly 60 countries and regions.

Hotel Overview

			Add	Tel
1	Shanghai JC Mandarin Hotel	★★★★★	No. 1225 Nanjing West Road, Jing An District, Shanghai	+86 21 6279 1888
2	Yanan Hotel	★★★★	No. 1111 Yan An Zhong Road, Jing An District, Shanghai	+86 21 6133 1188
3	Shanghai New Jin Jiang Hotel	★★★★★	No. 161, Changle Road, Huang Pu District, Shanghai	+86 21 6415 1188
4	Rendezvous Merry Hotel, Shanghai	★★★★	No. 396, Yan An West Road, Jing An District, Shanghai	+86 21 6249 5588
5	Holiday Inn Shanghai	★★★★	No. 700 Changshou Road, Pu Tuo District, Shanghai	+86 21 6276 8888
6	Shanghai Hotel	★★★★	No. 505 Wulumuqi North Road, Jing An District, Shanghai	+86 21 6248 0088
7	Jing An Hotel, New Building	★★★	No. 370, Huashan Road, Jing An District, Shanghai	+86 21 6248 1888
8	Shanghai Yinfa Mansion	★★★	No. 1068, Beijing West Road, Jin An District, Shanghai	+86 21 6255 6600
9	Charms Hotel	★★★	No. 619, Jiu Jiang Road, Huang Pu District, Shanghai	+86 21 5359 4900
10	Motel 168		No. 678, An Yuan Road, Pu Tuo District	+86 21 6232 2228



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