



TECHNICAL PROGRAMME MONDAY 14TH JUNE 2010

| Room/ Time | “Hall of Wärtsilä” (Peer Gynt Salen) | “Hall of Rolls-Royce” (Scene GH) | “Hall of ABB” (Klokkeklang) | “Hall of Det Norske Veritas” (Troldtog) |
|---------------|---|--|---|---|
| 13:30 | (1–1) Product Development – Diesel Engines – High Speed Engines | (8–1) Integrated Systems & Electronic Control – Engines, Turbines & Applications – Sensors & Actuators | (6–1) Product Development, Component & Maintenance Technology – Gas Engines – New Engines | (4–1) Diesel Engines – Tribology I |
| | Chairman: A. Ludu, AVL List GmbH, Austria | Chairman: E. Boletis, Wärtsilä Switzerland Ltd., Switzerland | Chairman: L. M. Nerheim, Bergen University College, Norway | Chairman: R. Aufischer, Miba Gleitlager GmbH, Austria |
| | <p>284: MTU solutions for meeting future exhaust emissions regulations, by U. Dohle, Tognum AG, Germany</p> <p>248: Development strategies for high speed marine diesel engines, by F. Koch, T. Seidl, O. Schnitzer, G. Oehler, A. Loettgen, S. Loeser, MAN Diesel & Turbo SE, Germany</p> <p>279: The Design and Development of the General Electric LV250 Diesel Engine, by K. Bailey General Electric, USA, C. Atz, J. Dowell, GE Transportation, USA, P. Raina, GE Transportation, India, K. Lierz, FEV Inc., USA, E. Reichert, FEV Motorentchnik, Germany</p> <p>251: The design and development of a new advanced heavy duty high speed diesel engine, by E. Karimi, N. Hadley, Technomot, UK</p> | <p>160: Electronics for the safety-critical application and control of combustion engines, by D. Eikemeier, T. Dauenhauer, MAN Diesel & Turbo SE, Germany</p> <p>5: Reducing fuel consumption on the field by continuously measuring fuel quality on electronically fuel injected engines, by P. Flot, A. Meslati, Controle Mesure Regulation, France, T. Delorme, Ecole Centrale Marseille, France</p> <p>190: Exhaust gas recirculation electric actuation technology, by A. Pinturo, Woodward Governor, USA</p> <p>166: Malfunction diagnosis at marine diesel engines based on indicator cock pressure data – Model based sensor reconstruction of in-cylinder pressure trace using indicator cock pressure information & Fundamental investigations on malfunction diagnosis at marine diesel engines based on reconstructed in-cylinder pressure information, by P. Obrecht, P. Voegelin, ETH Zurich, Aerothermochemistry and Combustion Systems Laboratory, Switzerland, C. Onder, E. Oezatay, ETH Zurich, Institute for Dynamic Systems and Control, Switzerland, P. Fuchs, W. Fuchs, Peter Fuchs Technology Group AG, Switzerland</p> | <p>54: Development of the Rolls-Royce C26:33 marine gas engine series, by T. Humerfelt, E. Johannessen, E. Vaktskjold, L.-A. Skarbö, Rolls-Royce Marine AS, Engines - Bergen, Norway</p> <p>109: Newly developed Mitsubishi MACH II-SI and CM-MACH gas engines, enhancing and expanding utilization for energy and specialty gases, by M. Ishida, S. Namekawa, Y. Takahashi, H. Suzuki, A. Yuuki, K. Iwanaga, Mitsubishi Heavy Industries, Ltd., Japan</p> <p>115: Development of large gas engine with high efficiency (MD36G), by T. Oka, M. Kondo, Mitsui Engineering and Shipbuilding Co. Ltd., Japan, T. Aiko, Daihatsu Diesel MFG. Co., Ltd., Japan</p> <p>189: Newly developed Kawasaki green gas engine – Top performance GE, by H. Sakurai, T. Sugimoto, Y. Sakai, T. Tokuoka, Y. Nonaka, M. Honjou, T. Horie, Kawasaki Heavy Industries, Ltd., Japan</p> <p>241: Development of high efficient gas engine H35/40G, by D. Y. Jung, J. S. Kim, J. T. Kim, E. S. Kim, Hyundai Heavy Industries Co., Ltd., Korea, A. Skipton-Carter, Ricardo UK Ltd., UK</p> | <p>74: Suction air humidity influence on piston running reliability in low-speed two-stroke diesel engines, by F. Micali, M. Weber, M. Stark, K. Raess, Wärtsilä Switzerland Ltd., Switzerland, M. Potenza, University of Salento, Italy</p> <p>111: Lubrication challenges for distillate fuel operated two-stroke engines, by M. Boons, R. Brand, Chevron Oronite Technology b.v., The Netherlands</p> <p>276: Investigation of tribological damage mechanisms of various slide bearing materials used in medium speed and low speed diesel engines on the microscopic and macroscopic scale, by M. Offenbecher, W. Gärtner, G. Gumpoldsberger, R. Aufischer, Miba Gleitlager GmbH, Austria, F. Gruen, I. Godor, Montanuniversitaet Leoben, Austria, Austria</p> <p>89: Experimental investigation of lubrication regimes on piston ring – Cylinder liner contacts for large two-stroke engines, by A. Voelund, C. Felter, MAN Diesel & Turbo SE, Denmark</p> |
| 15:00 | 30 minutes Coffee break | | | |



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|---------------|---|--|---|--|
| 15:30 | (1–2) Product Development – Diesel Engines – Medium Speed Engines I | (3–10) Environment, Fuel & Combustion – Diesel Engines – Overview Emissions | (6–2) Product Development, Component & Maintenance Technology – Gas Engines – New Components | (4–2) Diesel Engines – Tribology II |
| | Chairman: C. Teetz, <i>MTU Friedrichshafen GmbH, Germany</i> | Chairman: R. J. Turunen, <i>VTT, Finland</i> | Chairman: J. D. Hiltner, <i>Hiltner Combustion Systems, LLC, USA</i> | Chairman: H. Gehring, <i>MAN Diesel & Turbo SE, Germany</i> |
| | <p>2: GE Powerhaul diesel engine development, by <i>P. Flynn, R. J. Mischler, GE Transportation, USA</i></p> <p>165: Development of NIIGATA new medium-speed diesel engine “28AHX”, by <i>K. Imai, H. Nagasawa, H. Yamamoto, S. Kato, K. Sonobe, Niigata Power Systems Co., Ltd., Japan</i></p> <p>302: Development of the new Caterpillar VM32C LE low emission engine, by <i>U. Hopmann, Caterpillar Motoren GmbH und Co. KG, Germany</i></p> <p>156: MTU’s new series 8000 gas-protected engine, by <i>M. Eckstein, E. Osterloff, C. Hecker, MTU Friedrichshafen GmbH, Germany</i></p> | <p>23: Legislative update: International requirements on next generation nonroad – Marine & stationary engines (diesel & gas) & their fuels, by <i>P. Scherm, P. Zepf, EUROMOT, Germany</i></p> <p>313: Large high speed diesels, quo vadis? Superior system integration, the answer to the challenge of the 2012 – 2020 emission limits, by <i>A. Ludu, K. H. Foelzer, AVL List GmbH, Austria, T. Bouche, AVL List GmbH, Switzerland, M. Engelmayer, LEC - Large Engines Competence Center, Austria, B. Pemp, Institute for Internal Combustion Engines and Thermodynamics Graz University of Technology, Austria, G. Lustgarten, AVL Consultant, Switzerland</i></p> <p>174: Future emission demands for ship and locomotive engines – Challenges, concepts and synergies from HD-applications, by <i>A. Wiertalla, L. Ruhkamp, T. Koerfer, FEV Motorentechnik GmbH, Germany, D. Tomazic, M. Tatur, E. Koehler, FEV Inc., USA</i></p> <p>50: Large engine injection systems for future emission legislations, by <i>C. Kendlbacher, P. Müller, M. Bernhaupt, G. Rehbichler, Robert Bosch AG, Austria</i></p> | <p>47: Port inlet gas admission valves for large gas engines, by <i>R. Boom, Woodward, Netherlands</i></p> <p>173: A new technology electronic ignition which eliminates the limitations of traditional ignition systems, by <i>J. Lepley, Altronic Inc., USA, K. Brooks, D. Bell, Altronic, LLC, USA</i></p> <p>182: Development of pre-chamber spark plug for gas engine, by <i>K. Yamanaka, DENSO Corporation, Japan, S. Nishioka, DENSO Europe B.V., Netherlands, Y. Shiraga, S. Nakai, OSAKA GAS CO., Ltd., Japan</i></p> <p>312: The gas engine of the future – Innovative combustion and high compression ratios for highest efficiencies, by <i>J. Klausner, C. Trapp, H. Schaumberger, M. Haidn, J. Lang, GE Jenbacher GmbH, Austria</i></p> | <p>24: Cylinder lubrication – Understanding oil stress in the low speed 2-stroke diesel engine, by <i>J. Hammett, J. L. Garcia, Shell Global Solutions GmbH, Germany, F. Micali, M. F. Weber, Wärtsilä Switzerland Ltd., Switzerland, A. De Risi, University of Salento, Italy</i></p> <p>243: The piston-running behaviour monitoring of large bore low-speed marine diesel engine at sea by measurement of piston ring oil film thickness and iron content in cylinder drain oil, by <i>Y. Saito, T. Yamada, IHI Corporation, Japan, K. Moriyama, Diesel United, Ltd., Japan</i></p> <p>113: Intelligent monitoring of journal bearings, by <i>A. Valkonen, J. Juhanko, P. Kuosmanen, Helsinki University of Technology, Finland, J. Martikainen, Mikkeli University of Applied Science, Finland</i></p> <p>98: The UNIVERSAL concept: the lubrication solution to 2020 and beyond, by <i>D. Lancon, V. Doyen, TOTAL Raffinage Marketing, France</i></p> |
| 17:00 | End of Technical Sessions for Monday | | | |
| 18:30 | Welcome Reception at the Grieg Hall sponsored by Chevron Oronite | | | |



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|---------------|---|--|--|--|
| 08:30 | (1–3) Product Development – Diesel Engines – Medium Speed Engines II | (3–3) Environment, Fuel & Combustion – Diesel Engines – PM / Smoke | (6–4) Product Development, Component & Maintenance Technology – Gas Engines – Operating Experience | (9–1) Turbochargers & Turbomachinery – New Products |
| | Chairman: T. Bouché, AVL List GmbH, Austria | Chairman: G. Wachtmeister, Technical University of Munich, Germany | Chairman: S. Goto, Niigata Power Systems Co., Ltd., Japan | Chairman: C. Roduner, ABB Turbo Systems Ltd., Switzerland |
| | <p>222: Continuous development of Hyundai HiMSEN engine family, by J. K. Park, K. H. Ahn, J. T. Kim, E. S. Kim, Hyundai Heavy Industries. Co., Ltd., Republic of Korea</p> <p>206: Latest developments in Wärtsilä’s medium-speed engine portfolio, by K. Heim, Wärtsilä Corporation, Switzerland, M. Troberg, Wärtsilä Corporation, Italy, R. Ollus, M. Vaarasto, Wärtsilä Corporation, Finland</p> <p>287: Introduction of the Caterpillar common rail on M32 engine family – Operational experience, by S. Haas, Caterpillar Motoren GmbH und Co. KG, Germany</p> <p>167: The 32 bore engine program from MAN Diesel -SE - The flexible adaption in terms of concept and layout in the propulsion and stationary market for Diesel- and Gas operations, by W. Bauder, C. Vogel, G. Heider, C. Poensgen, MAN Diesel & Turbo SE, Germany</p> | <p>87: PM emission from ships – How to measure and reduce PM during voyage, by K. Maeda, M. Tuda, M. Hori, National Fisheries University, Japan, K. Takasaki, Kyushu University, Japan, G. Kon, National Institute for Sea Training, Japan</p> <p>73: Chemical and physical characterization of exhaust particulate matter from a marine medium speed diesel engine, by J. Ristimäki, G. Hellén, Wärtsilä Finland Oy, Finland, M. Lappi, VTT, Finland</p> <p>72: Particle number emission from high speed diesel engine with state-of-the-art exhaust gas after treatment system, by S. Okada, Y. Kawabata, T. Saeki, Y. Takahata, M. Okubo, Yanmar Co., Ltd., Japan, J. Senda, Doshisha University, Japan</p> <p>11: Swirl combustion system for low smoke and particle emissions, by R. Turunen, VTT, Finland, C. Wik, A.-H. Selvaraj, Wärtsilä, Finland</p> | <p>37: Operational experience of the 51/60 DF from MAN Diesel, by N. Boeckhoff, G. Heider, P. Hagl, MAN Diesel & Turbo SE, Germany</p> <p>112: Wärtsilä dual fuel (DF) engines for offshore applications and mechanical drive, by K. Portin, Wärtsilä Finland Oy, Finland</p> <p>125: Experiences on 1 to 6 MW class highly adaptable micro-pilot gas engines in one hundred fields and over fifty thousand running hours, by S. Nakayama, S. Goto, T. Hashimoto, S. Takahashi, Niigata Power Systems Co., Ltd., Japan</p> <p>262: Exploration of Optimum Design Parameters for Miller-Cycle Lean-Burn Gas Engines, by D. Montgomery, S. Fiveland, S. Vijayaraghavan, H. Sivadas, M. Willi, Caterpillar, Inc., USA</p> | <p>128: New turbochargers for more powerful engines running under stricter emissions regimes, by P. Neuenschwander, M. Thiele, M. Seiler, ABB Turbo Systems Ltd., Switzerland</p> <p>141: TCA33 – The new MAN Diesel turbocharger for high-speed engines, by K. Bartholomae, E. Boelt, D. Balthasar, MAN Diesel & Turbo SE, Germany</p> <p>135: Development of high-pressure ratio type turbocharger, R. Murano, K. Nakano, Y. Hirata, IHI, Japan</p> <p>188: High Performance Small Turbochargers, J. Klima, M. Vacek, O. Tomek, PBS Turbo s.r.o., Czech Republic</p> |
| 10:00 | 30 minutes Poster Session break (Coffee will be served) | | | |



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|---------------|---|--|--|--|
| 10:30 | (1–4) Product Development – Diesel Engines – High & Medium Speed Engines | (3–4) Environment, Fuel & Combustion – Diesel Engines – NOx | (6–3) Product Development, Component & Maintenance Technology – Gas Engines – Technology, Fuels & Emissions | (9–2) Turbochargers & Turbomachinery – Advanced Turbocharging Systems |
| | Chairman: P. Flynn, GE Transportation Systems, USA | Chairman: G. Hellén, Wärtsilä Finland Oy | Chairman: M. Troberg, Wärtsilä M. Tuda, S.p.A., Italy | Chairman: A. Rippl, MAN Diesel & Turbo SE, Germany |
| | <p>200: Development of the Series 4000 IRONMEN workboat engine, by N. Vesper, R. Speetzen, C. Glowacki, MTU Friedrichshafen GmbH, Germany</p> <p>102: Impact of market demands and future emission legislations on medium speed engine design, by E. Reichert, H. Pleimling, FEV, Germany</p> <p>286: Emissions reduction opportunities on MaK engines, by K. Wirth, Caterpillar Motoren GmbH und Co. KG, Germany</p> <p>211: The next generation of MTU series 4000 rail engines to comply with EUIII B emission legislation, by I. Wintruff, O. Bücheler, S. Huchler, MTU Friedrichshafen, Germany</p> <p>43: Design and development of the new GE Tier 3 locomotive diesel engine, by N. Blythe, General Electric, USA, W. D. Glenn, GE Transportation, USA</p> | <p>136: Emission control technology by Niigata, the clean marine diesel engine for low speed, medium speed and high speed, by T. Tagai, T. Mimura, S. Goto, Niigata Power Systems Co., Ltd., Japan</p> <p>228: SCR system for NOx reduction of medium speed marine diesel engine, Y. Niki, K. Hirata, T. Kishi, T. Inaba, M. Takagi, T. Fukuda, T. Nagai, E. Muraoka, National Maritime Research Institute, Japan</p> <p>25: Development of a NOx fast sampling system for marine diesel engines, by M. Ioannou, K. Xepapa, T. Stelios, N. Kyrtatos, NTUA, Greece</p> <p>217: Development of sulfur-tolerant SCR type De-NOx system for marine applications, Y.-M. Lee, S.-K. An, DSME, Korea, K.-H. Kang, IAE, Korea, Ø. Toft, BW Fleet Management AS, Norway</p> | <p>106: Methane slip reduction in Wärtsilä lean burn gas engines, by A. Järvi, Wärtsilä, Finland</p> <p>172: Qualifying the effect of different gas mixtures on NOx emissions, by M. Birner, G. Wachtmeister, Technical University of Munich, Germany</p> <p>212: Knock in dual fuel engines: A comparison between different techniques for detection and control, by F. Millo, G. Lavarino, Politecnico di Torino, Italy, A. Cafari, Wärtsilä, Italy</p> <p>213: Development of high-efficiency gas engine through observation and simulation of knocking phenomena, by H. Tajima, D. Tsuru, Kyushu University, Japan, M. Kunimitsu, K. Sugiura, Mitsui Engineering and Shipbuilding Co., Ltd., Japan</p> | <p>139: IMO III emission regulation: Impact on the turbocharging system, by E. Codan, S. Bernasconi, H. Born, ABB Turbo Systems Ltd., Switzerland</p> <p>22: Utilisation of cylinder air injection as a low load and load acceptance improver on a medium-speed diesel engine, by C. Wik, S. Hostman, Wärtsilä Finland Oy, Finland</p> <p>82: Design and first application of a 2-stage turbocharging system for a medium-speed diesel engine, by T. Raikio, B. Hallbäck, A. Hjort, Wärtsilä Finland Oy, Finland</p> <p>293: 2-stage turbocharging – Flexibility for engine optimisation, by E. Codan, C. Mathey, A. Rettig, ABB Turbo Systems Ltd., Switzerland</p> |
| 12:00 | Lunch break | | | |



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|---------------|--|---|---|--|
| 13:30 | (1–5) Product Development – Diesel Engines – Low Speed Engines | (3–5) Environment, Fuel & Combustion – Diesel Engines – Injection & Engine Technologies | (6–5) Product Development, Component & Maintenance Technology – Gas Engines – Non-Traditional Gases & Tribology | (9–3) Turbochargers & Turbomachinery – Advanced Turbocharging Systems II |
| | Chairman: M. W. Rasser, AVL List GmbH, Austria | Chairman: K. Boulouchos, ETH Zürich, Switzerland | Chairman: S. Laiminger, GE Jenbacher GmbH & Co OHG, Austria | Chairman: V. Haeisen, ABB Turbo Systems Ltd., Switzerland |
| | <p>186: Cutting edge technologies of UE engine for higher efficiency and environment, by H. Sakabe, N. Hosokawa, Mitsubishi Heavy Industries, Ltd., Japan</p> <p>199: The Wärtsilä low-speed engine programme for today’s and future requirements, by K. Heim, Wärtsilä Industrial Operations, Switzerland, P. Frigge, Wärtsilä Switzerland Ltd, Switzerland</p> <p>64: Product development of MAN B&W two-stroke diesel engines, by S. Kindt, MAN Diesel & Turbo SE, Denmark</p> <p>86: The new Wärtsilä 820 mm-bore engine series – Advanced design and first running experience, by M. Spahni, H. Brunner, R. de Jong, Wärtsilä Switzerland Ltd., Switzerland</p> | <p>238: Some experimental experience gained with a medium-speed diesel research engine, by M. Imperato, T. Sarjovaara, M. Larmi, Helsinki University of Technology, Finland, I. Kallio, C. Wik, Wärtsilä Finland Oy, Finland</p> <p>143: Predictive simulation and experimental validation of phenomenological combustion and pollutant models for medium-speed common rail diesel engines at varying inlet conditions, by P. Kyrtatos, P. Obrecht, K. Boulouchos, ETH Zürich, Switzerland, K. Hoyer, Paul Scherrer Institut, Switzerland</p> <p>195: Emission reduction potential of 3000 bar common rail injection and development trends, by S. Pflaum, J. Wloka, G. Wachtmeister, Technical University of Munich, Germany</p> <p>218: NOx emission reduction by use of N2 diluted charge air, by O. Melhus, I. J. Garasen, B. Haukebo, K. K. Langnes, Ecoxy AS, Norway, D. J. Stookey, Compact Membrane Systems, Inc., USA, J. E. Hustad, Norwegian University of Science and Technology (NTNU), Norway</p> | <p>126: Thermodynamic optimisation of three gas engine families for higher efficiency, by R. Boewing, D. Plohberger, MWM GmbH, Germany</p> <p>180: Development of new gas engine oils for superior corrosion and deposit control in severe gas applications, by S. Rea, Infineum USA, L.P., USA</p> <p>258: Next generation gas engine lubrication, by K. Tellier, ExxonMobil Research and Engineering, USA, G. Delafargue, ExxonMobil Lubricants and Specialties, France, K. Harrington, ExxonMobil Lubricants and Petroleum Specialities Company, USA</p> <p>237: Controlling NOx emissions of large gas engines based on in-cylinder pressure measurement, by J. Eggers, S. Sofke, M. Greve, AVAT Automation GmbH, Germany</p> | <p>250: Fuel economy by load profile optimized charging systems from MAN, by H. Schmuttermair, A. Fernandez, M. Witt, MAN Diesel & Turbo SE, Germany</p> <p>194: Development of large-scale turbocharger generator unit, by S. Tochio, R. Ide, T. Ito, T. Iwasaki, R. Suenaga, H. Shimaya, Nishishiba Electric Co., Ltd., Japan, M. Kondo, M. Kunimitsu, Mitsui Engineering and Shipbuilding Co., Ltd., Japan</p> <p>204: Development of new turbocharger technology for energy efficient and low emission diesel power plant, by T. Teshima, M. Kimura, K. Shiraishi, Y. Ono, Mitsubishi Heavy Industries, Ltd., Japan</p> <p>10: Multi-model adaptive wastegate control of a large medium-speed engine, by F. Oestman, T. Kaas, Wärtsilä Finland Oy, Finland</p> |
| 15:00 | 30 minutes Poster Session break (Coffee will be served) | | | |



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|---------------|---|--|---|--|
| 15:30 | (12) Users' Aspects – Land-based Applications (Power Generation, CHP, Oil & Gas, Rail) | (3–6) Environment, Fuel & Combustion – Diesel Engines – Emission Reduction | (2–5) Fundamental Engineering – Gas Engines | (9–4) Turbochargers & Turbomachinery – Aspects of Turbomachinery |
| | Chairman: T. J. Callahan, <i>Southwest Research Institute (SwRI), USA</i> | Chairman: N. P. Kyrtatos, <i>NTUA, Greece</i> | Chairman: R. Beran, <i>AVL List GmbH, Austria</i> | Chairman: K. Bartholomae, <i>MAN Diesel & Turbo SE, Germany</i> |
| | <p>1: Exhaust emissions from A 2,850 kW EMD SD60M locomotive equipped with a diesel oxidation catalyst, by S. Fritz, D. Osborne, J. C. Hedrick, <i>Southwest Research Institute, USA</i>, M. Iden, <i>Union Pacific Railroad Company, USA</i>, J. Galassie, <i>Miratech Corporation, USA</i></p> <p>60: Wind Diesel Hybrid Systems - Engines supporting wind power, by C. Dommermuth, J. Dorner, <i>MAN Diesel & Turbo SE, Germany</i></p> <p>272: VOC energy recovery by gas turbine cogeneration, by Y. Yoshimura, S. Uji, <i>IHI Corporation, Japan</i></p> <p>57: Application of an experimental EGR system to a 1,715kw EMD 12-645e3 locomotive engine, by J. Hedrick, S. Fritz, <i>Southwest Research Institute, USA</i>, S. Ted, <i>Advanced Global Engineering, Inc., USA</i></p> | <p>274: Sailing towards IMO Tier III – Exhaust aftertreatment versus engine-internal technologies for Medium Speed Diesel Engines, by G. Stiesch, G. Tinschmann, D. Thum, S. Schlueter, P. Pelemis, <i>MAN Diesel & Turbo SE, Germany</i></p> <p>299: Exhaust emission control of Mitsubishi UE diesel engine, by A. Miyanagi, K. Watanabe, J. Yanagi, <i>Mitsubishi Heavy Industries, Ltd., Japan</i></p> <p>85: Two-stroke engine emission reduction technology: state-of-the-art, by M. F. Pedersen, A. Andreassen, S. Mayer, <i>MAN Diesel & Turbo SE, Denmark</i></p> <p>205: Theoretical and experimental study on measures to minimize the NOx -SFC trade-off, by K. Sugiura, K. Shimada, <i>Mitsui Engineering and Shipbuilding Co., Ltd., Japan</i>, K. Takasaki, K. Okazaki, <i>Kyushu University, Japan</i></p> | <p>168: Formation of formaldehyde in lean burn gas engines, by M. Bauer, G. Wachtmeister, <i>Technical University of Munich, Germany</i></p> <p>239: Optimization of combustion and knocking behaviour in open chamber gas engines based on optical analysis and 3D-CFD simulation, by P. Christiner, G. Kogler, A. Wimmer, <i>LEC - Large Engines Competence Center, Austria</i>, T. Jauk, <i>Graz University of Technology, Austria</i></p> <p>4: Knock occurrence prediction by means of chemical kinetics in heavy duty dual-fuel engine, by G. Javadirad, M. Gorji, <i>Nushirvani University of Technology, Iran</i>, A. Al-Sened, <i>Technomot Ltd., United Kingdom</i>, M. Keshavarz, H. Safari, <i>Iran Heavy Diesel MFG. Co., Iran</i></p> <p>33: Stoichiometric operation of natural gas engines for very low emissions applications, by J. Hiltner, M. Flory, <i>Hiltner Combustion Systems, USA</i></p> | <p>170: Turbocharger performance stability under HFO conditions, by V. Haueisen, T. Behr, W. Gizzi, <i>ABB Turbo Systems Ltd., Switzerland</i></p> <p>129: 3D-fluid-structure interaction for an axial turbocharger turbine blade to improve the vibrational safeguard process, by A. Bornhorn, S. Mayr, T. Winter, <i>MAN Diesel & Turbo SE, Germany</i></p> <p>42: ST27: A new generation of radial turbine turbochargers for highest pressure ratios, by R. Drozdowski, K. Buchmann, <i>Kompressorenbau Bannewitz GmbH, Germany</i></p> <p>79: Development of Niigata-NGT3B gas turbine for large standby generator set, by H. Kojima, S. Tarui, T. Kuribayashi, K. Takahashi, M. Koyama, <i>Niigata Power Systems Co., Ltd., Japan</i></p> |
| 17:00 | End of Technical Sessions for Tuesday | | | |
| 18:30 | ABB Evening | For details, please see your personal invitation included in your congress bag. | | |



POSTER SESSION FOR TUESDAY 15TH JUNE 2010

Session 1

145: The Design of a New Generation Medium-Speed Research Engine, by O. Kaario, M. Imperato, A. Tilli, K. Lehto, O. Ranta, E. Antila, A. Elonheimo, T. Sarjoavaara, M. Nuutinen, M. Larmi, Aalto University School of Science and Technology, Finland, T. Roennskog, S. Pisilae, Componenta Pistons Oy, Finland, J. Tiainen, I Kallio, H. Rinta-Torala, Wärtsilä Finland Oy, Finland

Session 2

20: Improving the Combustion process in lean-burn natural gas compressor engines, by R. Evans, R. Brown, A. Mezo, The University of British Columbia, Canada

176: Combustion system design study to maximize thermal efficiency in open chamber stationary natural gas engines, L. Tozzi, E. Sotiropoulou, D. Chiera, J. Adair, Woodward, USA, D. Montgomery, P Jensen, B. Hanks, A. Kim, Caterpillar, USA

Session 3

52: Effects of Miller timing on the performance and exhaust emissions of a non-road diesel engine, by S: Niemi, University of Vaasa and Turku University of Applied Sciences, Finland, P. Nousiainen, P. Lassila, V. Tikkanen, K. Ekman, Turku University of Applied Sciences, Finland

132: Emissions – The way ahead, by P. Tremuli, A. S. Carter, Ricardo UK Ltd., UK

137: Improvements to transient response times and decreased smoke production in medium speed marine propulsion diesel engines, by T. Yamada, Y. Okano, K. Hanamoto, S. Shimomura, DAIHATSU DIESEL MFG.CO., Ltd., Japan

169: NO formation model of a diesel engine based on quantum chemistry, by S. Zhou, T. Xu, Y. Zhu, Harbin Engineering University, P.R. of China

201: Optimization of combustion system to comply with IMO Tier 2 regulation on medium speed diesel engines, by K. -D. Kim, W. -H. Yoon, S. -H. Ghal, H. -I. Kim, Hyundai Heavy Industries Co., Ltd., Korea, C.-S. Bae, Korea Advanced Institute of Science and Technology, Korea

Session 6

95: Wärtsilä gas engines – The green power alternative, by H. Sillanpaeae, U. Astrand, Wärtsilä Finland Oy, Finland

130: Integrated cylinder pressure measurement for gas engine control, by S. Neumann, M. Bienwald, IMES GmbH, Germany

Session 12

155: Acid and base in engine oil and the correct determination of oil change intervals, by F. W. Girshick, Infineum USA, L.P., USA



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|---------------|---|--|--|---|
| 08:30 | (11–1) Users' Aspects – Marine Applications – Service Experiences | (2–1) Fundamental Engineering – Piston Engines – Combustion Four Stroke | (3–7) Environment, Fuel & Combustion – Diesel Engines – Modelling I | (8–4) Integrated Systems & Electronic Control – Engines, Turbines & Applications – Electronic Control Systems |
| | Chairman J. Knuth, Peter Döhle Schiffahrts-KG, Germany | Chairman: S. Pischinger, FEV Motorentchnik GmbH, Germany | Chairman: A. Wimmer, LEC Large Engines Competence Center, Austria | Chairman: I. Vlaskos, Ricardo Deutschland GmbH, Germany |
| | <p>Short presentation of CIMAC WG 2 “Classification Societies – Diesel”</p> <p>17: Service experience of MAN B&W two stroke diesel engines, by S. B. Jakobsen, MAN Diesel & Turbo SE, Denmark</p> <p>45: Field experience with the MWH ReliaValve with sentry rotator: a 2-stroke exhaust valve with demonstrated time between overhauls (TBO) of over 5 years, by H. Fellmann, Märkisches Werk GmbH, Germany</p> <p>53: Some reliability trends and operating issues related to exhaust gas turbochargers and diesel engine crankshaft & running gear in the marine industry – A classification society view, by K. Banisoleiman, J. Stainsby, Lloyds Register EMEA, UK</p> <p>289: Operating experience with MaK M43, by K. Vollrath, Caterpillar Motoren GmbH und Co. KG, Germany</p> | <p>32: HERCULES-B: The continuation of a major R&D effort towards the next generation marine diesel engines, by N. Kyrtatos, NTUA, Greece, L. Hellberg, Wärtsilä Corp., Finland, C. Poensgen, MAN Diesel & Turbo SE, Germany</p> <p>34: Optical and numerical investigation of the combustion process in a single cylinder medium speed diesel engine, by U. Waldenmaier, J. Metzger, P. Porten, G. Stiesch, MAN Diesel & Turbo SE, Germany, T. Heidenreich, U. Wagner, Institute for Reciprocating Engines (IFKM), University of Karlsruhe, Germany</p> <p>230: Fuel injection strategies for heavy fuel medium speed engines to comply with future emission limits, by R. Rabe, M. Epp, H. Harndorf, E. Hassel, C. Fink, University of Rostock, Germany</p> <p>18: Experimental and computational considerations of fuel spray mixing, by H. J. Hillamo, V. Vuorinen, T. Sarjovaara, O. Kaario, M. Larmi, Aalto University School of Science and Technology, Finland</p> | <p>281: Aspects of emulsified fuel spray combustion in a high-pressure and high-temperature atmosphere, by H. Okada, T. Tsukamoto, H. Sasaki, Tokyo University of Marine Science and Technology, Japan, T. Ohtsuka, Ibaraki Prefectural Kaiyo High School, Japan</p> <p>247: Assessing the performance of spray and combustion simulation tools against reference data obtained in a spray combustion chamber representative of large two-stroke diesel engine combustion systems, by R. Schulz, K. Herrmann, G. Weisser, B. v. Rotz, S. Hensel, F. Selting, Wärtsilä Switzerland Ltd, Switzerland, Y. M. Wright, M. Bolla, K. Boulouchos, Swiss Federal Institute of Technology (ETH) Zürich, Switzerland</p> <p>39: Modelling of the oxidation of fuel sulphur in low speed two-stroke diesel engines, by A. Andreasen, S. Mayer, MAN Diesel & Turbo SE, Denmark</p> <p>164: A study on the spray combustion characteristics of bio diesel fuel, by A. Azetsu, K.-O. Hagio, M. Aoki, Tokai University, Japan</p> | <p>209: From remote monitoring to life-cycle asset management – The development of a new service concept, by J. Pensar, Wärtsilä Corporation, Finland, R. Windischhofer, Abo Akademi University, Finland</p> <p>214: Permanent diagnosis and optimization of large-bore marine engine operation with expert based AVL EPOSTM, by H. Mohr, R. Teichmann, N. Mayrhofer, AVL List GmbH, Austria, C. Pfister, AVL AUTOKUT Engineering Kft., Hungary, R. Johansen, Kongsberg Maritime AS, Norway</p> <p>227: Applying close loop control, ‘Auto-tuning’, to MAN Diesel two-stroke engines, by T. Moeller, MAN Diesel & Turbo SE, Denmark</p> <p>207: The UNIC embedded controls – First years of field experience, by J. Pensar, Wärtsilä Corporation, Finland, J. Akerman, F. Oestman, P. Juppo, Johan Grankull, Wärtsilä Finland Oy, Finland</p> |
| 10:00 | 30 minutes Poster Session break (Coffee will be served) | | | |



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|---------------|---|---|--|---|
| 10:30 | (11–2) Users' Aspects – Marine Applications – Monitoring | (2–2) Fundamental Engineering – Piston Engines – Mechanics I | (3–9) Environment, Fuel & Combustion – Diesel Engines – Downstream Components | (5–1) Component & Maintenance Technology – Piston Engines – Components |
| | Chairman: E. Gust, ZOLLERN BHW Gleitlager, Germany | Chairman: R. Nordrik, Rolls-Royce Marine AS, Norway | Chairman: S. Mayer, MAN Diesel & Turbo SE, Denmark | Chairman: F. Koch, MAN Diesel & Turbo SE, Germany |
| | <p>75: Shipboard engine performance assessment by comparing actual measured data to nominal values produced by detailed engine simulations, by N. Kyrtatos, E. Tzanos, NTUA, Greece, J. Coustas, D. Vastarouhas, E. Rizos, Danaos Shipping Co. Ltd., Greece</p> <p>21: One way to condition-based survey for marine diesel engines, by J. Rebel, Germanischer Lloyd, Germany</p> <p>175: Development of a remote non intrusive diagnosis system for two stroke diesel engines, by F. J. Jimenez-Espadafor, J. A. Becerra Villanueva, M. Torres Garcia, T. Sanchez Lencero, Seville University, Spain, F. Fernandez-Vacas, M. Bueno del Amo, Endesa Generacion, Spain</p> <p>310: Evaluation method of engine and propulsion shaft alignment for large vessel, by I. Sugimoto, T. Nakao, Hitachi Zosen Diesel and Engineering Co., Ltd., Japan</p> | <p>107: Comparison of crankshaft calculation methods with reference to classification societies' requirements, by M. Savolainen, H. Tienhaara, Wärtsilä Oy, Finland, T. Resch, AVL List GmbH, Austria, B. Smiljanic, AVL AST d.o.o., Croatia</p> <p>90: Fatigue design and optimization of diesel engine cylinder heads, by T. Gocmez, Institute for Combustion Engines VKA RWTH Aachen University, Germany, S. Lauer, FEV Motorentechnik GmbH, Germany</p> <p>83: Fracture mechanics approach to contact problems in medium speed diesel engines, by C. Loennqvist, A. Maentylae, Wärtsilä Finland Oy, Finland</p> <p>223: The influence of hull deflection and propeller loading on load distribution in engine bearings, by B. J. Vartdal, Det Norske Veritas AS, Norway</p> | <p>69: Theoretical and practical results of engine and exhaust gas performance optimisation, by H. Jungbluth, A. Tippl, Innospec Ltd., Germany, D. Daniels, Innospec Fuel Specialties, USA, I. Crutchley, Innospec Limited, UK, S. Bludszuweit, H. Stueckrad, MET Motoren- und Energietechnik GmbH, Germany</p> <p>256: Exhaust gas heat recovery on large engines – Potential, opportunities, limitations, by I. Vlaskos, P. Feulner, A. Alizadeh, I. Kraljevic, Ricardo Deutschland, Germany</p> <p>242: Next Generation of flexible and reliable SCR-Systems, by C. Gerhart, H.-P. Krimmer, Alzchem Trostberg GmbH, Germany, B. Schulz, NIGU Chemie GmbH, Germany, O. Kroecher, Paul Scherrer Institute, Switzerland, D. Peitz, Paul Scherrer Institute, Germany, Th. Sattelmayer, P. Toshev, Lehrstuhl fuer Thermodynamik, Technical University of Munich, Germany, G. Wachtmeister, A. Heubuch, Lehrstuhl fuer Verbrennungskraftmaschinen, Technical University of Munich, Germany</p> <p>44: Attenuation of low-frequency exhaust noise from combustion engines, by S. Frederiksen, C. Ammitzbo, Silentor A/S, Denmark, B. B. Jessen, Delta, Denmark</p> | <p>81: Recent development in analysis and design of principal bearings of large two stroke diesel engines, by P. Rønnedal, H. W. Christensen, MAN Diesel & Turbo SE, Denmark</p> <p>193: Trends in engine design and their impact on engine bearing design and performance, by C. Forstner, Miba Gleitlager GmbH, Austria</p> <p>298: Variable valve timing – A necessity for future large diesel and gas engines, by C. Mathey, ABB Turbo Systems Ltd., Switzerland</p> <p>198: Revised fatigue assessment of welded two-stroke engine structures, by D. Bachmann, S. Soennichsen, Wärtsilä Corporation, Switzerland</p> <p>27: Topology optimization of main medium-speed diesel engine parts, by P. Böhm, D. Pinkernell, MAN Diesel & Turbo SE, Germany</p> |
| 12:00 | Lunch break | | | |



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|---------------|---|--|---|---|
| 13:30 | (11–3) Users’ Aspects – Marine Applications – Fuels | (2–3) Fundamental Engineering – Piston Engines – Combustion Two Strokes | (3–8) Environment, Fuel & Combustion – Diesel Engines – Modelling II | (5–2) Component & Maintenance Technology – Piston Engines – Wear & Monitoring |
| | Chairman: Ø. Toft, <i>BW Fleet Management AS, Norway</i> | Chairman: K. Heim, <i>Wärtsilä Corporation, Switzerland</i> | Chairman: G. Weisser, <i>Wärtsilä Switzerland Ltd., Switzerland</i> | Chairman: F. Cantow, <i>Federal-Mogul Burscheid GmbH, Germany</i> |
| | <p>49: Experience with measuring cylinder oil consumption rate, by C. Schneider, <i>KRAL AG, Austria</i></p> <p>84: Combustion quality of marine residual fuel – Trend, control, effect on engine, by A. Takeda, N. Iijima, S. Umemoto, H. Miyano, <i>Nippon Yuka Kogyo, Japan</i>, H. Nakatani, K. Adachi, H. Nomura, K. Adachi, <i>NYK LINE, Japan</i>, H. Tajima, <i>Kyushu University, Japan</i></p> <p>157: The users views of having to use low-sulphur fuels combined with slow-steaming, by K. Wilson, <i>Keith Wilson and Associates, England</i></p> <p>300: Environment-friendly operation using LPG on the MAN B&W dual fuel ME-GI engine, by R. S. Laursen, <i>MAN Diesel & Turbo SE, Denmark</i>, V. W. Rudh, <i>Hamworthy Gas Systems AS, Norway</i></p> <p>297: Evaluation of using natural gas as a fuel for LNG carriers “Application of marine gas turbines”, by A. Radwan, M. Morsy, <i>University of Alexandria, Egypt</i>, M. Fahmy, <i>Arab Academy for Science and Technology, Egypt</i></p> | <p>40: In-situ optical combustion diagnostics on a large two-stroke marine diesel engine, by H. H. Poulsen, J. Hult, S. Mayer, <i>MAN Diesel & Turbo SE, Denmark</i></p> <p>108: Study of exhaust gas separation (EGS) system on 2-stroke engine, by M. Takahashi, I. Tanaka, M. Ohtsu, <i>Mitsui Engineering and Shipbuilding Co., Ltd., Japan</i></p> <p>270: PIV study of the effect of piston motion on the confined swirling flow in the scavenging process in 2-stroke marine diesel engines, by S. Haider, K. E. Meyer, J. Schramm, <i>Technical University of Denmark (DTU), Denmark</i>, S. Mayer, <i>MAN Diesel & Turbo SE, Denmark</i></p> <p>38: Design of experiments analysis of the NOx-SFOC trade-off in two-stroke marine engine, by A. E. Tuner, A. Andreasen, S. Mayer, <i>MAN Diesel & Turbo SE, Denmark</i></p> | <p>255: Combustion chamber design to control particulate matter emission, by P. Tremuli, A. Skipton Carter, <i>Ricardo UK Ltd., UK</i></p> <p>229: Computational study of In-Cylinder NOx reduction in a large marine diesel engine using water injection strategies, by C. Chryssakis, A. Frangopoulos, L. Kaiktsis, <i>NTUA, Greece</i></p> <p>240: A combined numerical and experimental study on the influence of the injection system on the spray, the combustion and emissions in medium speed diesel engines, by C. Fink, H. Harndorf, <i>Rostock University, Germany</i>, M. Frobenius, <i>AVL Deutschland GmbH, Germany</i>, R. Pittermann, <i>WTZ Rosslau gGmbH, Germany</i></p> <p>235: Predictive simulation of combustion and emissions in large diesel engines with multiple fuel injection, by G. Pirker, B. Losonczy, W. Fimmml, A. Wimmer, F. Chmela, <i>LEC - Large Engines Competence Center, Austria</i></p> | <p>100: Contact pressure and temperature prediction in a marine piston ring, by D. Grundtitz, H. Pedersen, H.-G. Qvist, S. Grahn, <i>Daros Piston Rings, Sweden</i></p> <p>147: Cylinder condition analysis in relation to large bore engines, by J. W. Fogh, C. L. Felter, <i>MAN Diesel & Turbo SE, Denmark</i></p> <p>184: Development of bearing wear monitoring system using automatic calibration technique, B-WACS, by J. K. Kim, U. Duk Hyung, K. Sok Ha, K. Sang Jin, <i>Doosan Engine, Korea</i></p> <p>179: Development of a new evaluation method for the influences of catalyst fines on abrasive wears of marine diesel engines burning heavy fuel oil, by T. Yamada, H. Ukai, T. Fujii, <i>Diesel United, Japan</i></p> <p>46: Further development and application of MWH CrystalCoat: a mineral-metal, multi-phase coating to protect highly-loaded engine components against hot-corrosion, by R. Stanglmaier, <i>Märkisches Werk GmbH, Germany</i></p> |
| 15:00 | 30 minutes Poster Session break (Coffee will be served) | | | |
| 15:30 | <p>Room: “Hall of Wärtsilä”</p> <p>Panel: “Are regulations for air emissions counter productive for derating and low load operation?”</p> <p>Chairman: N. Hansen, <i>Hanseatic Lloyd Schiffahrt GmbH & Co. KG, Germany</i></p> <p>Panelists: L. C. Espenes, <i>Norwegian Maritime Directorate, Norway</i>, H.-J. Götze, <i>Germanischer Lloyd AG, Germany</i>, C. Poensgen, <i>MAN Diesel & Turbo SE, Germany</i>, M. Tartarczyk, <i>Hanseatic Lloyd Schiffahrt, Germany</i>, K. Wirth, <i>Caterpillar Motoren GmbH & Co. KG, Germany</i></p> | | | |
| 17:00 | End of Technical Sessions for Wednesday | | | |



POSTER SESSION FOR WEDNESDAY 16TH JUNE 2010

Session 2

224: Effect of intake channel design to cylinder charge and initial swirl, by A. Eero, TKK, Finland

306: Optimization of intake port shape in a DI diesel engine using CFD flow simulation, by J. Kheyrollahi, DESA, Iran

Session 3

171: NO_x formation simulation and NO_x emission reduction in a marine diesel engine, by S. Zhou, Y. Zhu, Harbin Engineering University, P.R. of China, P. Zhou, University of Strathclyde, UK

233: Numerical simulation of a new dual fuel (Diesel-Gas) D87 engine with multi-dimensional CFD model, by A. Ghareghani, M. Ghanbari, M. Mirsalim, S. A. Jazayeri, Iran Heavy Diesel Engine Mfg. (DESA), Iran

236: Computational study of flow and combustion in a large marine diesel engine operating with heavy fuel oil, by C. Chryssakis, K. Pantazis, L. Kaiktsis, NTUA, Greece

245: Characterising heat release in a diesel engine: A comparison between Seiliger process and Vibe model, by Y. Ding, D. Stapersma, H. Grimmelius, Technology University of Delft, the Netherlands, H. Knoll, Netherlands Defence Academy, the Netherlands

291: Application of a SCRT system at modular power plant based on 'On Road' technology, by M. Himmen, I. Zirkwa, F. Kunz, HJS, Germany

Session 5

185: Introduction of Doosan water in oil monitoring system, O-WACS, by K. -T. Hong, J. -S. Park, M. -C. Park, S. -J. Kim, Doosan Engine, Korea

282: New MAHLE innovative steel piston designs for high performance gas engines, by T. Estrum, MAHLE GmbH, Germany

Session 11

196: PID controller auto-tuning for ship power plant simulation system, by F.E.I. Jingzhou, Harbin Engineering University, China

232: Inclusion rating of clean steels: A study on role of steel cleanliness on fatigue performance of forged steel components used in marine propulsion, by K.Y Sastry, J. O. Nokleby, Det Norske Veritas AS, Norway, M. Hekkanen, M. Jarl, Oerebro University, Sweden

280: The integration of mean value first principle diesel engine models in dynamic waste heat and cooling load analysis, by H. Grimmelius, H. Nicolai, Delft University of Technology, The Netherlands, D. Stapersma, Netherlands Defence Academy, The Netherlands



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|---------------|--|---|--|--|
| 08:30 | (8–3) Integrated Systems & Electronic Control – Engines, Turbines & Applications – Operation & Field Experience | (3–1) Environment, Fuel & Combustion – Diesel Engines – Fuels I | (2–6) Fundamental Engineering – Piston Engines – Mechanics II | (5–4) Component & Maintenance Technology – Piston Engines – Injection |
| | Chairman: H. Pleimling, <i>FEV Motorentchnik GmbH, Germany</i> | Chairman: M. Larmi, <i>Helsinki University of Technology (HUT), Finland</i> | Chairman: P. Hupperich, <i>FEV Engine Technology, Inc., USA</i> | Chairman: K. Sugiura, <i>Mitsui Engineering & Shipbuilding Co. Ltd., Japan</i> |
| | <p>55: Scavenge performance monitoring system for Wärtsilä two-stroke engines, by S. Nanda, <i>Wärtsilä Switzerland, Switzerland</i></p> <p>149: Goal based standards in verification of ship machinery, by E. Brodin, J. O. Nokleby, H. B. Karlsen, <i>Det Norske Veritas, Norway</i></p> <p>154: An integrated modelling framework for the design, operation and control of marine energy systems, by G. G. Dimopoulos, N. M. P. Kakalis, <i>Det Norske Veritas, Greece</i></p> <p>275: Field experiences and opportunities of modern measurement techniques, by T. Philipp, <i>Geislinger GmbH, Austria</i></p> | <p>31: A step to reduce SOx emission from ships – Improvement in combustion of high-aromatic and low-sulfur distillate fuel, by K. Takasaki, K. Okazaki, D. Yamanishi, <i>Kyushu University, Japan</i>, K. Sugiura, <i>Mitsui Engineering and Shipbuilding Co., Ltd., Japan</i>, S. Baba, H. Tanaka, <i>Hitachi Zosen Corporation, Japan</i></p> <p>246: Ignition and Combustion properties of Marine Fuels, potential Problems and Challenges. Will current and revised Fuel Specifications be able to ensure Ignition and Combustion characteristics will be adequately addressed?, by D. O. Halle, J. Stirling, A. Strom, <i>DNV Petroleum Services, Norway</i>, J. K. Paulsen, <i>Canima Services AS, Norway</i></p> <p>183: Optical Combustion Analyzer (OCA) for evaluation of combustion characteristics of bunker fuel oils, by E. Tomita, A. Yamaguchi, T. Takeuchi, <i>Okayama University, Japan</i>, Y. Yamamoto, K. Morinaka, <i>Eiwa-Giken, Co. Ltd., Japan</i></p> <p>70: Investigating the ignition properties of marine fuels by the Fuel Ignition Analyser and its comparison to marine engines, by P. de Hoog, K. Steemberg, <i>Shell, The Netherlands</i>, S. Forget, <i>Shell, UK</i></p> | <p>78: Stability of controlling operation inputs over inlet air conditions of turbocharged compression-ignition engines, by G. Chen, <i>Gannon University, USA</i></p> <p>197: Full cyclic simulation and fatigue design of conrod and crankshaft for medium-speed diesel engine, by J. H. Lee, S. C. An, K. H. Jung, J. H. Son, J. G. Bae, <i>Hyundai Heavy Industries Co., Ltd., Korea</i></p> <p>51: Vibration characteristics of a V20 medium speed gas engine – Simulation and measurement, by R. Nordrik, H. Solbakken, <i>Rolls-Royce Marine AS, Norway</i></p> <p>92: A single-phase flow model based on void fraction for boiling heat transfer calculation in cylinder head, by X. Li, <i>Shanghai Jiaotong University</i>, Z. Chen, <i>Shanghai Marine Diesel Engine Research Institute, P.R. China</i></p> | <p>119: Second generation of HFO injection system for medium speed engines to fulfil future requirements, by C. Senghaas, H. Schneider, S. Reinhard, <i>L'Orange GmbH, Germany</i>, D. Jay, K. Ehrstroem, <i>Wärtsilä Corp., Finland</i></p> <p>118: Proposal on controlled spray evaporation and mixture formation by use of multi-component mixing fuel spray model, by Y. Kobashi, <i>Kanazawa Institute of Technology, Japan</i>, M. Matsumoto, J. Senda, <i>Doshisha University, Japan</i>, E. Matsumura, <i>Toyota Motor Corporation, Japan</i></p> <p>131: Economical and technical aspects of Duap's fuel injection parts and systems, by E. Vogt, S. R. Jung, M. Poletti, <i>Duap AG, Switzerland</i></p> <p>159: The new HEINZMANN common-rail and EFI engine control system for medium-speed and high-speed engines, by M.- T. Heller, A. Jaufmann, <i>HEINZMANN, Germany</i></p> |
| 10:00 | 30 minutes Poster Session break (Coffee will be served) | | | |



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|---------------|---|---|--|---|
| 10:30 | (8–2) Integrated Systems & Electronic Control – Engines, Turbines & Applications – Fuel Injection & Valve Actuation | (3–2) Environment, Fuel & Combustion – Diesel Engines – Fuels II | (2–4) Fundamental Engineering – Piston Engines – Thermodynamics | (5–3) Component & Maintenance Technology – Piston Engines – Noise & Vibration |
| | Chairman: M. Pischinger, <i>FEV Motorentechnik GmbH, Germany</i> | Chairman: K. Takasaki, <i>Kyushu University, Japan</i> | Chairman: T. Körfer, <i>FEV Motorentechnik GmbH, Germany</i> | Chairman: Y. Itoh, <i>Niigata Power Systems Co., Ltd., Japan</i> |
| | <p>62: A study on numerical calibration of fuel injection parameters for diesel engine, by R. Li, L. Li, <i>Southwest Jiaotong University, P. R. China</i></p> <p>36: More than 100.000 running hours field test experience in HFO operation with CR injection systems on MAN medium speed diesel engines – Basis for reliable and efficient propulsion engines to reach IMO TIER2 and IMO TIER3 legislation, by G. Heider, T. Kremser, T. Gritzko, <i>MAN Diesel & Turbo SE, Germany</i></p> <p>101: A new fuel injection and exhaust valve actuation system for a two-stroke engine family in the 30 to 50 cm bore segment, by E. Boletis, A. Kyrtatos, T. Yildirim, Y. Jia, <i>Wärtsilä Switzerland, Switzerland</i></p> <p>68: Valve train with learning control features, by M. Herranen, T. Virvalo, K. Huhtala, <i>Tampere University of Technology, Finland, T. Glader, I. Kallio, Wärtsilä Finland Oy, Finland</i></p> | <p>121: Medium speed diesel engines operated on alternative fuels: lessons learned and remaining questions, by S. Verhelst, R. Sierens, <i>Ghent University, Belgium, L. Vervaeke, T. Berckmoes, L. Duyck, Anglo Belgian Corporation nv, Belgium</i></p> <p>13: Marine distillate fuels specifications – Today and tomorrow, by Ø. Buhaug, <i>Statoil ASA, Norway</i></p> <p>26: High Cetane Number paraffinic diesel fuels and emission reduction in engine combustion, by A. Tilli, M. Imperato, M. Larmi, T. Sarjoavaara, <i>Aalto University School of Science and Technology, Finland, P. Aakko-Saksa, VTT Technical Research Center, Finland, M. Honkanen, Neste Renewable Fuels Oy, Finland</i></p> <p>91: EMI MIN – A government funded research program to reduce emissions, by U. Schlemmer-Kelling, S. Watzek, <i>Caterpillar Motoren GmbH & Co. KG, Germany</i></p> | <p>203: Advanced heat transfer modeling with application to CI engine CFD simulations, by M. Nuutinen, O. Kaario, M. Larmi, <i>Aalto University School of Science and Technology, Finland</i></p> <p>187: Piston surface heat transfer during combustion in large marine diesel engines, by M. V. Jensen, J. H. Walther, <i>Technical University of Denmark, Denmark</i></p> <p>210: Combining dual stage turbocharging with extreme Miller timings to achieve NOx emissions reductions in marine diesel engines, by F. Millo, M. Gianoglio, <i>Politecnico di Torino, Italy, D. Delneri, Wärtsilä, Italy</i></p> | <p>114: Noise reductions for low speed diesel engines and application of noise measurement using spherical beamforming technique, by S. Kajihara, <i>Mitsui Engineering and Shipbuilding Co., Ltd., Japan, K. Takashima, Nittobo Acoustic Engineering Co., Ltd., Japan, J. Hoejgaard, M. Roegild, MAN Diesel & Turbo SE, Denmark</i></p> <p>285: New low noise solutions for medium speed diesel engines, by H. Tienhaara, M. Aura, S. Jussila, <i>Wärtsilä Finland Oy, Finland, F. Degano, Wärtsilä Italia S.p.A, Italy, A. Karjalainen, Machinery Acoustics Oy, Finland</i></p> <p>219: Two node torsional vibration control of the multi-cylinder two stroke diesel engine, by S. J. Hwang, K.T. Yoo, <i>STX Heavy Industries, Korea, U. K. Kim, Korea Maritime University, Korea</i></p> <p>231: Modern ultrasonic quality evaluation of large crankshafts, by A. Silvonen, P. Halla-aho, <i>Wärtsilä Finland Oy, Finland, T. Hakkarainen, Inspecta Oy, Finland</i></p> |
| 12:00 | Lunch break | | | |
| 13:30 | <p>Room: “Hall of Wärtsilä” The Collin Trust Lecture: “Beyond Oil”, by K. Aleklett, Prof. at Uppsala University, Sweden Presentation of the Collin Trust Lecture Award, by S. Dexter, President of the Collin Trust</p> | | | |
| 14:30 | <p>Room: “Hall of Wärtsilä” Panel: “Fuels of the future - What will come next after HFO” Chairman: N. Kyrtatos, <i>NTUA - Laboratory of Marine Engineering, Greece</i> Panelists: K. Aabo, <i>MAN Diesel & Turbo SE, Denmark, B. Cerup-Simonsen, A.P. Möller, Denmark, P. M. Einang, MARINTEK, Norway, P. de Hoog, Shell Global Solutions, Netherlands, N. Ohno, Nippon Yusen, NYK LINE, Japan, M. Troberg, Wärtsilä Italia S.p.A., Italy</i></p> | | | |
| 16:00 | End of Technical Sessions for Thursday | | | |
| 18:00 | Closing Ceremony and Gala Dinner Party at the Grieg Hall sponsored by ExxonMobil Marine Lubricants | | | |



POSTER SESSION THURSDAY 17TH JUNE 2010

Session 2

99: Comparison of several methods of improving the part-load performance of a medium-speed engine with a two-stage turbocharging system, by *J. Bucher, BBB, Germany*

292: Life assessment of the camshaft in a heavy duty diesel engine using flexible multibody dynamic, by *M. Mehrgou, Iran Heavy Diesel Engine Mfg Co. (DESA), Iran*

Session 3

117: New application and modeling of low ignitability fuel for marine engines, by *D. Struckmeier, D. Tsurum, H. Tajima, Kyushu University, Japan*

225: Characterisation of residual fuel oil combustion properties and the appropriate selection of marine fuel additives to improve combustion, by *M. Vermeire, Chevron, Belgium, L. Audoire, W. Ang, Infineum UK Ltd., England*

260: Syngas production from plasma stabilized diesel partial oxidation, by *A. Nikipelov, A. Rakitin, Y. Leonov, NeqLab Research BV, Netherlands, A. Starikovskii, Drexel Plasma Institute, USA,*

263: Non vegetable origin biofuels as a combustibility improver, by *L. Stor, A. Prada, PETROBRAS SA, Brazil*

Session 4

35: The use of tribology and wear metal analysis in two-stroke engines to optimize oil feed rates and reduce liner wear, by *M. Winkler, Kittiwake GmbH, Germany*

77: Online oil condition monitoring sensors, by *S. Lunt, Kittiwake Developments Ltd., UK*

191: The relationship between the oil analyses results and the running surface conditions of machinery – A report of marine field engineer, by *T. Hashimoto, M. Kawabata, Y. Sasaki, TRIBOTEX Co. Ltd., Japan*

202: Development of a new lead-free bearing material for low speed two-stroke diesel engines, by *M. Yamada, W. Zhong, N. Kawakami, A. Ono, Daido Metal Co., Ltd., Japan*

283: Slide bearing monitoring system: Recognizing friction before noticeable mechanical damage occurs; a field report, by *H. R. Uebel M. Theobald, Schaller Automation GmbH Co. KG, Germany*

Session 5

65: Development of integrated vibration analysis and monitoring system for marine diesel engines and ship machineries, by *D. Lee, K. Joo, T. Nam, Mokpo National Maritime University, Korea, E. Kim, S. Kim, Vitech, Korea*

163: Effects of inertia and gas torques on the crankshaft in determining vibration amplitudes for condition monitoring in preventive maintenance, by *J. C. Orji, Starzs Marine, Nigeria*

220: Sound field adjustment using sound absorber in the ISO type sound insulation test facilities, by *M.-S. Kim, STX Heavy Industries, Korea*