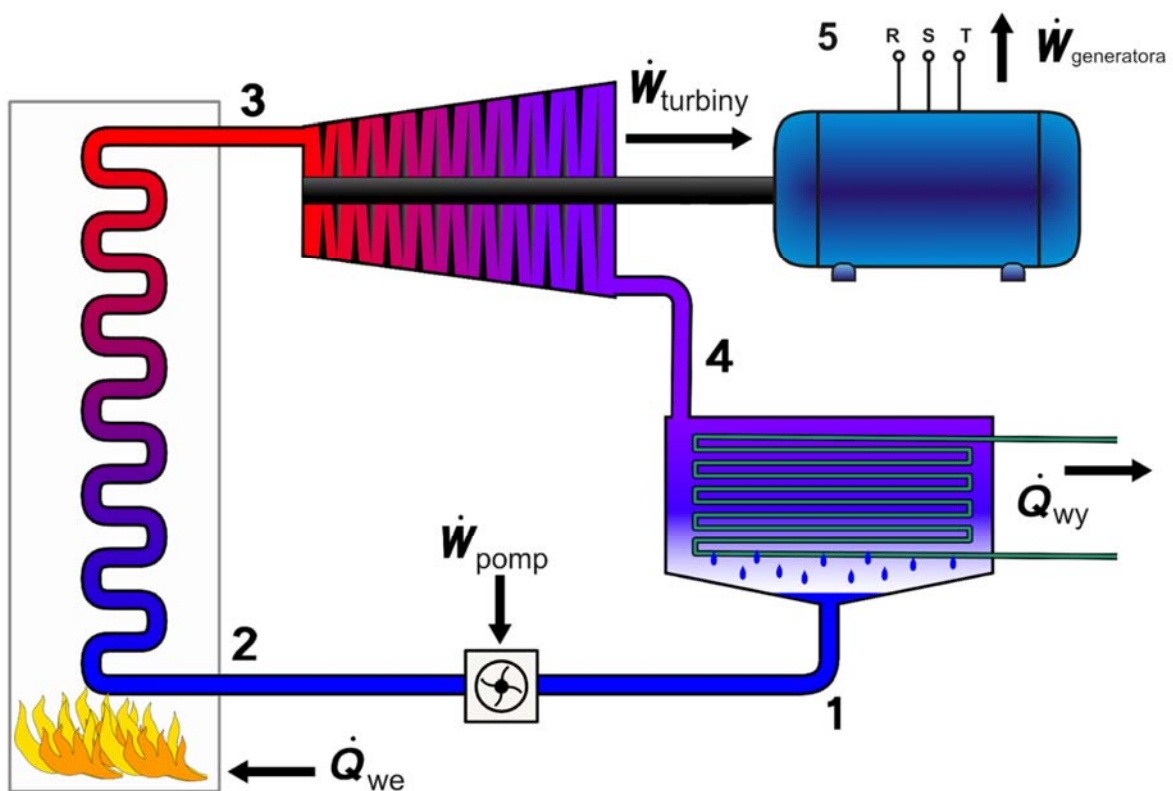


IERE Pick-up Papers

- Thermal power -



Rankine cycle layout From Wikimedia Common

IERE Central Office

March 2020

Picked up presentations related to "Thermal power" from IERE GM/Forums and Workshops from the last 3-4 years.

Contents

1. The Outline of Osaki CoolGen Project of Oxygen-blown IGCC Demonstration (November 2017, Putrajaya, S1-2)	1
Kazuya EGUSA, Staff Deputy Manager General Affairs & Planning Dept., Osaki Coolgen Corporation, Hiroshima, Japan	
2. Applying Circular Economy to a Coal-fired Power Plant: Opportunities and Challenges (November 2017, Putrajaya, S1-4)	16
Muhammad Nazry Chik*, Mohd. Hariffin Boosroh, Noraziah Muda, Liyana Yahya and Afifi Zainal, Researchers, CO ₂ Utilization Research Group, Advanced Research Program, TNB Research Sdn. Bhd, Kajang, Malaysia	
3. Enhancement of Post-combustion Carbon Capture via Adsorption Technology (November 2017, Putrajaya, S1-5)	27
Noraziah Muda*, Nor Hidayu Abd Rani, Mohd. Hariffin Boosroh, Low Carbon Power Generation, Advanced Research Program, TNB Research Sdn. Bhd, Kajang, Malaysia	
4. Energy saving and CO₂ reduction by boiler control optimization system "ULTY-V plus" (November 2017, Putrajaya,S1-6)	37
Toru YAMASHITA, Manager, Coal & Environment Research Laboratory, Coal Business Department, Idemitsu Kosan Co.,Ltd., Chiba, Japan	
5. Development of an Auto-Milling Control System to Improve Coal Power Plant Combustion Efficiencies (November 2017, Putrajaya, S1-7)	52
Mohd Shiraz Aris, Principal Researcher, Combustion Section, TNBR, Kajang, Malaysia	
6. Co-firing with a high-ratio of wood biomass to make the most existing coal-fired power plant (November 2017, Putrajaya,S1-8)	59
Emi OHNO, Manager, Boiler Basic Design Department, IHI Corporation, Tokyo, Japan	
7. Operation Big Data based Failure Probability Assessment for Risk Based Maintenance of Fossil Power Boiler Tube (November 2017, Putrajaya, S3-2)	70
Bum-Shin Kim, Principle Researcher, KEPRI, KEPCO, Daejeon, Korea	
8. A Dynamic Optimization Sizing Tool for Waste Heat Recovery-Gas Turbine Inlet Cooling (November 2017, Putrajaya, S4-2)	78
Mohd Shiraz Aris, Principal Researcher, Combustion Section, TNBR, Kajang, Malaysia	

- 9. Reduction of Biomass Gasification Power Plant Maintenance Problem using Catalysts Mixture of Coal Bottom Ash: Dolomite (November 2017, Putrajaya, S4-5)** 90

Nor Fadzilah OTHMAN, Principal Researcher, Renewable Energy Section, TNB Research Sdn Bhd, Kajang, Malaysia
- 10. Fuel Flexibility and Fuel Change in Coal Power Plants (September 2018, Munich, S1-1)** 98

Axel Meschgbiz, Senior Thermal Engineer, TOE-M/Mechanical Engineering, RWE Technology International, Essen, Germany
- 11. Technologies to use carbon free ammonia in power plant (September 2018, Munich, S1-2)** 115

Toshiyuki SUDA, Manager, Resources, Energy & Environment Business Area, IHI Corporation, Tokyo, Japan
- 12. An assessment of the flexibility of combined heat and power plants in power systems with high shares of intermittent power sources (September 2018, Munich, S1-5)** 125

Johanna BEIRON, Rubén Mocholí MONTAÑÉS, Fredrik NORMANN, Filip JOHNSON, PhD student, Energy Technology, Chalmers University of Technology, Gothenburg, Sweden
- 13. Eemshaven Biomass co-combustion (September 2018, Munich, S2-1)** 134

Michael Schütz, Manager, TOE-M/Mechanical Engineering, RWE Technology International, Essen, Germany

Paul Munster, Manager, TOP-N, Project Manager NL, RWE Technology International, Geertruidenberg, Netherlands
- 14. Technology status of biomass power generation in Korea (September 2018, Munich, S2-2)** 141

Kyoungil Park, Senior Researcher, Power Generation Laboratory, KEPCO Research Institute, Daejeon, Republic of Korea
- 15. Utilization of CO₂ from Waste Incineration Plants for Power-to-Fuel Technology (September 2018, Munich, S2-3)** 158

Emmanouil Kakaras, Senior Vice President Energy Solution, Mitsubishi Hitachi Power Systems Europe GmbH, Germany
- 16. Progress of Osaki CoolGen Oxygen-blown IGCC with CO₂ Capture Demonstration (September 2018, Munich, S2-4)** 173

Yugo ISHIZAKI, Senior Associate, Manager General Affairs & Planning Dept., Osaki CoolGen Corporation, Hiroshima, Japan
- 17. Advanced KM CDR Process Using New Solvent (September 2018, Munich, S2-5)** 189

- ¹Takashi NOJO, ²Yasuhide NAKAGAMI, ¹Senior Research Engineer,
²Manager, R&D Center, Kansai Electric Power Co., Inc., Osaka, Japan
Takashi KAMIJO, Project Manager, CO₂ EOR Business Department,
Mitsubishi Heavy Industries Engineering Ltd., Yokohama, Japan
18. **Battery Energy Storage Solution - Enhancing the operational flexibility of flexible combined cycle industrial gas turbines (September 2018, Munich, S3-2)** 204
Uwe Fuchs, Siemens AG, EM MS PA, Mannheim, Germany
19. **The future of thermal power plants under the expansion of renewable energy in Japan (September 2018, Munich, S4-2)** 214
Kojiro Hemmi, Research Associate, Research Department, Japan Electric Power Information Center, Tokyo, Japan
20. **Study on Control Reserve Assessment of thermal power plants (Evaluation Index of Load Frequency Control Capability and Its Application to an Improvement Effect of Coal Power Plant Operation) (September 2018, Munich, S4-3)** 231
Fumihiko Yoshiba, Senior Research Engineer, EERL, Central Research Institute of Electric Power Industry, Kanagawa, Japan
21. **Improving Performance and Flexibility of Thermal Power Plants Combined with Advanced Digital Technologies (September 2018, Munich, S4-4)** 244
Christian Bergins, Emmanouil Kakaras & Falk Hoffmeister, Mitsubishi Hitachi Power Systems Europe, Duisburg, Germany
22. **Development on The Optimal Operational Power-Plant's Supporting-System (September 2018, Munich, S4-5)** 259
Hideyuki ISHIGAMI, General Manager, Thermal Power Business Department, CHUBU Electric Power Co., Inc., Nagoya, Japan
Motohiro ICHIBA, Tsuyoshi TOUBO, Manager, Thermal Power Business Department, CHUBU Electric Power Co., Inc., Nagoya, Japan
Tomoya SOMA, Senior Expert, AI Analytics Business Development Division, NEC Co., Tokyo, Japan
Takazumi KAWAI, Principal Researcher, Security Research Laboratories, NEC Co., Kawasaki, Japan
23. **Development of Abnormality Detection System for Power Plant Facility (September 2018, Munich, S4-6)** 278
Jong-Duk Son, Hee-Soo Kim, Ji-Hoon Lee, Seok-Man Sohn, Beom-Soo Kim, Yong-Chae Bae
Clean Power Generation Laboratory, KEPCO Research Institute, Daejeon, South Korea

24. **Tackling Varnish Formation in Turbomachinery Which Lead to Maximize Turbine and Compressor Availability (March 2019, Bali, S5-7)** 289
Bambang Wahyudi, Country Technical Manager, SHELL, Indonesia
25. **Steam Turbine Lifetime Assessment (March 2019,Bali, S5-8)** Ilham 301
KURNIAWAN, Ops Eng Team Leader, Facility Engineering, Star Energy Geothermal Salak, Ltd, Jakarta, Indonesia
Diva E. NATAPRAWIRA, Reliability Engineer, Facility Engineering, Star Energy Geothermal Salak, Ltd, Jakarta, Indonesia
Edi GARNADI, Rotating Equipment Maintenance Coordinator, O&M, Star Energy Geothermal Salak, Ltd, Jakarta, Indonesia