Selection of Topics for Presentation in the Lecture "Economic Optimization" - SS2016

Gas Turbines

1. A Study of Humidified Gas Turbines for Short-Term Realization in Midsized Power Generation – Part 1 (2005)
2. Performance Benefits Using Siemens Advanced Compressor Cleaning System (2004)

Steam Plants

3. Interne Zusatzfeuerung (2003)
4. Enhancement of the Electrical Efficiency of Commercial Fuel Cell Units by Means of an Organic Rankine Cycle: A Case Study (2013)

Combined Cycle Plants

5. A Comparative Evaluation of Advanced Combined Cycle Alternatives (1991)
6. Ertüchtigung bestehender Dampfkraftwerke durch Gasturbinen (1998)

Economic Optimisation

7. Primärenergieeinsparung dezentraler Blockheizkraftwerke im Vergleich zu GuD-Kraftwerken unter Berücksichtigung überregionaler Versorgungsaufgaben (2012)

Carbon Capture and Storage

8. Evaluation of Design Performance of the Semi-Closed Oxy-Fuel Combustion Combined Cycle (2012)
9. Zero CO2 emission SOLRGT power system (2012)
10. Thermodynamic Analysis of Zero-Atmospheric Emissions Power Plant
11. Optimization of Thermodynamically Efficient Nominal 40 MW Zero Emission Pilot and Demonstration Power Plant in Norway
12. The Oxy-Fuel Supercritical CO2 Allam Cycle: New Cycle Developments to Produce even Lower-Cost Electricity from Fossil Fuels without Atmospheric Emissions (2014)
13. Advanced Zero Emissions Gas Turbine Power Plant
14. Proposal and Analysis of a Novel Zero CO2 Emission Cycle With Liquid Natural Gas Cryogenic Exergy Utilization
15. Chemical Looping Combustion – Analysis of Natural Gas Fired Power Cycles With Inherent CO2 Capture
16. CO2 capture from power plants Part I. A parametric study of the technical performance based on monoethanolamine (2007)
17. CO2 capture from power plants Part II. A parametric study of the economical performance based on mono-ethanolamine (2007)
18. Performance and Cost Analysis of a Novel Gas Turbine Cycle With CO2 Capture (2007)

19. Evaluation of natural gas combined cycle power plant for post-combustion CO2 capture integration (2013)
20. Systematic study of aqueous monoethanolamine (MEA)-based CO2 capture process: Techno-economic assessment of the MEA process and its improvements (2016)
21. Energy and exergy analyses for the carbon capture with the Chilled Ammonia Process (CAP) (2009)
22. Quantitative evaluation of the chilled-ammonia process for CO2 capture using thermodynamic analysis and process simulation (2010)
23. Exergetic comparison of CO2 capture techniques from solid fossil fuel power plants (2016)
24. Techno-economic evaluation of the evaporative gas turbine cycle with different CO2 capture options (2012)
25. Analysis of Gas-Steam Combined Cycles With Natural Gas Reforming and CO2 Capture
26. Techno-economic evaluation of an integrated hydrogen and power co-generation system with CO2 capture (2016)
27. CO2 Emission Abatement in IGCC Power Plants by Semiclosed Cycles: Part A – With Oxygen Blown Combustion
28. CO2 Emission Abatement in IGCC Power Plants by Semiclosed Cycles: Part B – With Air Blown Combustion and CO2 Physical Absorption
29. Thermodynamic Performance of IGCC with Oxy-Combustion CO2 Capture
30. Overall environmental impacts of CCS technologies—A life cycle approach (2012)

Renewables

31. Analysis of the Conversion of Ocean Wind Power into Hydrogen (2013)
32. Design and Experimental Characterization of a Pumping Kite Power System
33. Design and implementation of an innovative 190ºC solar ORC pilot plant at the PSA (2011)
34. Performance Analysis of OTEC Plants With Multilevel Organic Rankine Cycle and Solar Hybridization (2013)
35. Wege zur nachhaltigen Energieversorgung – Herausforderungen an Speicher und thermische Kraftwerke (2012)
36. BWK: Energiespeicher (2015)
37. Wasserstoff – Das Speichermedium für erneuerbare Energien (2012)
38. Neuer Entwicklungsansatz bei Druckluftspeichern (2013) + Druckluftspeicherkraftwerk mit Dampfkreislauf (2016) (2 Papers)
39. Wirtschaftliche Bewertung von Stromspeichertechnologien (2012)