

THERMODYNAMIC ANALYSIS OF THE REHEAT RANKINE CYCLE

Simona Lizica PARASCHIV

“Dunărea de Jos” University of Galați, Romania

Abstract: In order to increase the efficiency of the simple Rankine cycle, a parametric study has been done to analyze the influence of the reheat pressure on the cycle efficiency. With reheat, a power plant can take the advantage of the increased efficiency that results in higher boiler pressures and avoid low-quality steam at the turbine exhaust.

Keywords: efficiency, reheat cycle, energy, power plant, Rankine cycle

REFERENCES:

- [1] Cengel, Boles, “Thermodynamics - An Engineering Approach”, 5th Ed, Mcgraw-Hill, 2006
- [2] A. Khaliq, C. Kaushik, Second-law based thermodynamic analysis of Brayton/Rankine combined power cycle with reheat, Applied Energy, Volume 78, Issue 2, June 2004, Pages 179–197
- [3] O. Badr, S.D. Probert, P. O’Callaghan, Rankine cycles for steam power-plants, Applied Energy, Volume 36, Issue 3, 1990, Pages 191–231
- [4] Nishith B. Desai, Santanu Bandyopadhyay, Thermo-economic analysis and selection of working fluid for solar organic Rankine cycle, Applied Thermal Engineering 95 (2016) 471–481
- [5] S. Paraschiv, I. V. Ion, L. S. Paraschiv – Thermodynamic performance for the solar collector of a micro-combined cooling, heating and power system, EEJM, September 2011, Vol.10, No. 9, pp. 1311-1317
- [6] S. L. Paraschiv, S. Paraschiv, I. V. Ion, N. Badea – „Computational Combustion and Emission Analysis from a mCCHP System Compared to a Conventional Power Plant”, Recent Researches in Sociology, Financing Environment & Health Sciences, Playa Meloneras, Gran Canaria, Canary Island, Spain, March 24-25, 2011, ISBN: 978-960-474-287-5
- [7] I.V. Ion, M. Bălan, S. Paraschiv, L.S. Paraschiv – „Optimal size of the auxiliary heating boiler in a tri-generation system”, Proceedings of the 39. International Symposium on Agricultural Engineering – Actual Tasks on Agricultural Engineering, Opatija, Croatia, 22-25 February 2011, Conference Paper in Proceedings: Actual Tasks on Agricultural Engineering,
- [8] S. Paraschiv, S. L. Paraschiv, Ion V. Ion, N. Vatachi, - „Design and sizing characteristics of a solar thermal power plant with cylindrical parabolic concentrators in Dobrogea region“, Revista Termotehnica, nr. 2/2010, An XIV, nr. 2/2010, Editura Agir, ISSN 1222-4057.