

NOMENCLATURE

C_p	Specific heat at constant pressure
C_v	Specific heat at constant volume
k	Specific heat ratio
R	Ideal gas constant
C_{pc}	Specific heat at constant pressure for cold air
C_{ph}	Specific heat at constant pressure for burned gas
t	Temperature ratio
r	Compression pressure ratio
η_c	Compression isentropic efficiency
η_t	Expansion isentropic efficiency
$(r_{opt})_w$	Pressure ratio corresponding to the maximum net work output
$(r_{max})_w$	Largest pressure ratio corresponding to where net work output becomes zero
$(r_{opt})_\eta$	Pressure ratio corresponding to the maximum efficiency
$(r_{max})_\eta$	Largest pressure ratio corresponding to where efficiency becomes zero

REFERENCES

[1] Chen, L., Lin, J., Sun, F., and Wu, C., 1998, "Efficiency of An Atkinson Engine at Maximum Power Density," *Energy Conversion and Management*, **39**, No. 3/4, pp. 337–341.

[2] Sun, G., Akbari, P., Grower, B., and Mueller, N., 2012, "Thermodynamics of the Wave Disk Engine," 48th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, AIAA Paper 2012-3704.

[3] Hou, S. S., 2007 "Comparison of Performances of Air Standard Atkinson and Otto Cycles with Heat Transfer Considerations," *Energy Conversion and Management*, **48**, No. 5, pp. 1683–1690.

[4] Ramesh, C. V., 2010 "Valved Heat Engine Working on Modified Atkinson Cycle," *Journal of Energy Resources Technology*, **132**, No. 1.

[5] Zhao, J., Xu, M., Li, M., Wang, B., and Liu, S., 2012 "Design and Optimization of an Atkinson Cycle Engine with the Artificial Neural Net output work Method," *Applied Energy*, **92**, Issue C, pp. 492-502.

[6] Paraga-Ramirez, P., Varney, M., Tarkleson, E., Muller, N., Akbari, P., and Piechna, J., 2012, "Development of a Wave Disk Engine Experimental Facility," 48th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, AIAA Paper 2012-3703.

[7] Akbari, P., and Nalim, M. R., 2009, "Review of Recent Developments in Wave Rotor Combustion Technology," *Journal of Propulsion and Power*, **25**, No. 4, pp. 833-844.

[8] Kamiuto, K., 2005 "Comparison of Basic Gas Cycles Under the Restriction of Constant Heat Addition," *Applied Energy*, **83**, No. 6, pp. 583-593.