

TECHNOLOGY OF THERMAL RECEIVERS AND HEAT TRANSFER FOR SEATTLER TOWERS

RUGESCU, D.R.; SILIVESTRU, V. & IONESCU, M.D.

Abstract: *The manufacturing technology for the solar receiver of the aeroacoustic wind tunnel WINDER and of the electrical power plant SEATTLER, with the associated computer code are described. The study had proved the new, efficient means of creating a sustained airflow with very low turbulence and driving noise level. The novelty consists in a driving system without any moving parts, like compressors and fans. The additional improvement was promoted by using the solar mirror concentrator to substantially boost the airflow, a far more efficient method than the only known European endeavor to develop solar towers in Germany and Spain. The original combination between the solar mirror concentrator and the low temperature-low pressure solar receiver offers a strong increment of the efficiency in comparison to previous solutions. Practical conclusions are derived regarding the manufacturing technology for the difficult light-air receiver. The computational front method, previously demonstrated for solid rocket engines, is extended for SEATTLER application.*

Key words: *Solar receivers, heat exchangers, solar towers, gravity draught, concentrator receivers*



Authors' data: Prof. **Rugescu**, D[ragos] R[adu] D[an]; **Silivestru**, V[alentin]; **Ionescu**, M[ircea] D[an], University "Politehnica" of Bucharest Romania, Str. Bancila 18 sector 6, 060144, Bucharest, RO, rugescu@yahoo.com, valentin.silivestru@comoti.ro, dan.ionescu@comoti.ro

This Publication has to be referred as: Rugescu, D[ragos] R[adu] D[an]; Silivestru, V[alentin] & Ionescu, M[ircea] D[an] (2008). Technology of Thermal Receivers and Heat Transfer for Seattler Towers, Chapter 59 in DAAAM International Scientific Book 2008, pp. 697-742, B. Katalinic (Ed.), Published by DAAAM International, ISBN 978-3-901509-66-7, ISSN 1726-9687, Vienna, Austria
DOI: 10.2507/daaam.scibook.2008.59