THE GEOMETRY OF THE SCROLL THERMAL MACHINE

Marius ATANASIU, Iulian SÂRBU and Mihai PRODAN

"Gh. Asachi" Technical University of Iasi, Mechanical Engineering Faculty, 61 Dimitrie Mangeron Boulevard Iasi 700050, Romania, Tel +40.232.232337; e-mail atanasiu@mec.tuiasi.ro, atanasium@yahoo.com

ABSTRACT

A scroll thermal machine is a positive displacement compressor (or expander) that uses the compression (expansion) action provided by two intermeshing scrolls – one fixing and the other orbiting. The principle of the scroll compressor was developed during the early 1900's and was patented for the first time in 1905 by Léon Creux. Even if the theory for the scroll compressor indicated a machine potentially capable of reasonably good efficiencies, at that time the technology simply didn't exist to accurately manufacture the scrolls.

REFERENCES

- [1] JENS GRAVESEN, CHRISTIAN HENRIKSEN, "The Geometry of Scroll Compressor", SIAM Review, vol. 43, No. I, pag. 113-126
- [2] YOUN CHEOL PARK, YONGEHAN KIM, HONGHYUN CHO, "Thermodynamic analysis on the performance of a variable speed scroll compressor with refrigerant injection", IIFR Review, vol. 25, 2002, pag. 1072-1082
- [3] JENS GRAVESEN, CHRISTIAN HENRIKSEN, "Scroll Compressor using gas and liquid injection: experimental analysis and modeling", IIFR Review,vol.25,2002, pag.1143-1156
- [4] ZDENEC CEJKA, "Improvement of economy of Scroll", Compressor 2004,, pag.60-66
- [5] PETER NEUKIRCH, "Tendencies in scroll developments", Compressor 2004,, pag.171-176