

***Progress in sorption compressor
research at Ariel University***

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An ongoing research on sorption compressors is executed in the TEST laboratory at Ariel University. Recently, the construction of a three stage compressor, aiming for compressing nitrogen for driving Joule-Thomson cryocooler in space applications, is completed. In addition, a one-dimensional numerical model is developed and successfully validated against various experimental results. The model is fully parametric and suitable for describing the performances of any adsorbent-adsorbate pair, any number of compressing stages, with any number of sorption cells at each compressing stage, and with any cylindrical cell design (dimensions and materials). Currently, both the numerical model and the physical compressor are used to research the option of compressing different fluids for various applications. In the current paper we present our first steps in investigating sorption compression of carbon-dioxide and R404A