

This paper considers a cooling system for a thermal engine using heat from exhaust gas. This system uses a physical adsorption process of solid-gas (active carbon and ammonia). An adsorber tubular element of real scale is submitted to heat flux by electrical air heating, simulating exhaust gas. Temperatures and adsorbed mass are measured. Desorption and adsorption phenomena are described by the Dubinin-Radushkevich model equation, $m = W_0 [r_{gr}(T) \exp[-D(T^2 \ln(P_s(T)/P))]^n]$, where W_0 , n , and D are parameters characterising the adsorbent-adsorbate couple. These three parameters can be identified from a simple method (using data and models) characterising the adsorbent-adsorbate couple chosen