

Entropy study of the thermally insulated thermodynamic system¹

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Abstract

The classical analysis of the entropy of the thermally insulated thermodynamic system depends on dividing the solution into two parts. The first part study's the conversion of thermal energy into mechanical, and the other studies heat transfer from one body to another at finite temperature difference without generating work. The combination of the two partial conclusions was "If the processes going in the thermally insulated system are only reversible ones, then system's entropy will not change, and if any part of these processes is irreversible; then system's entropy will increase".

The first part of the traditional analysis is not perfect. Hilal [2] analyzed this part precisely and perfectly.

In this research a completely different analysis is done. The solution was precise and perfect as the solution in [2]; but it was smoother, more compact and done for the most common case (not for special cases as in [1 & 2]).

¹ For the paper in Arabic see pages (301-312).

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