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**Quantum Second Law with Entanglement**<sup>1</sup> LADISLAV  
ANDREY, Academy of Sciences, Prague — It is proved rigorously that  
every quantum operation generating quantum entanglement states in  
the multipartite quantum system of qubits leads to the reduction of  
quantum entropy of whole system. By other words the quantum entan-  
glement can be the source of quantum information. As the consequence  
the novel formulation of quantum second law is presented with possible  
applications to progressively developing quantum information science  
and quantum communications.

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