

Electronic Supplementary Information

Appendix A. List of included articles from the author's own database and not from the ERIC or Scopus database search

Ben-Naim, A. (2011). Entropy : Order or Information. *Journal of Chemical Education*, 88(5), 594-596. <https://doi.org/10.1021/ed100922x>

Bindel, T. H. (2007). Discovering the Thermodynamics of Simultaneous Equilibria. An Entropy Analysis Activity Involving Consecutive Equilibria. *Journal of Chemical Education*, 84(3), 449-452. <https://doi.org/10.1021/ed084p449>

Bindel, T. H. (2010). Understanding Chemical Equilibrium Using Entropy Analysis : The Relationship Between ΔS_{tot} (sys $^\circ$) and the Equilibrium Constant. *Journal of Chemical Education*, 87(7), 694-699. <https://doi.org/10.1021/ed100192q>

Craig, N. C. (1988). Entropy analyses of four familiar processes. *Journal of Chemical Education*, 65(9), 760-764. <https://doi.org/10.1021/ed065p760>

Gary, R. K. (2004). The Concentration Dependence of the ΔS Term in the Gibbs Free Energy Function : Application to Reversible Reactions in Biochemistry. *Journal of Chemical Education*, 81(11), 1599-1604. <https://doi.org/10.1021/ed081p1599>

Hazelhurst, T., A. (1931). Exorcising a Spectre : Entropy. *Journal of Chemical Education*, 8(3), 498-503.

Jungermann, A. H. (2006). Entropy and the Shelf Model : A Quantum Physical Approach to a Physical Property. *Journal of Chemical Education*, 83(11), 1686-1694. <https://doi.org/10.1021/ed083p1686>

Kozliak, E. I. (2014). Entropy of Mixing of Distinguishable Particles. *Journal of Chemical Education*, 91(6), 834-838. <https://doi.org/10.1021/ed4007666>

Laird, B. B. (1999). Entropy, Disorder, and Freezing. *Journal of Chemical Education*, 76(10), 1388-1390. <https://doi.org/10.1021/ed076p1388>

Lechner, J. H. (1999). Visualizing Entropy. *Journal of Chemical Education*, 76(10), 1382-1385. <https://doi.org/10.1021/ed076p1382>

Leff, H. S. (1996). Thermodynamic Entropy : The Spreading and Sharing of Energy. *American Journal of Physics*, 64(10), 1261-1271. <https://doi.org/10.1119/1.18389>

Novak, I. (2003). The Microscopic Statement of the Second Law of Thermodynamics. *Journal of Chemical Education*, 80(12), 1428-1431. <https://doi.org/10.1021/ed080p1428>

Plumb, R. C. (1964). Teaching the entropy concept. *Journal of Chemical Education*, 41(5), 254-256. <https://doi.org/10.1021/ed041p254>

Salagaram, T., & Chetty, N. (2011). Enhancing the understanding of entropy through computation. *American Journal of Physics*, 79(11), 1127-1132. <https://doi.org/10.1119/1.3623416>

Schoepf, D. C. (2002). A statistical development of entropy for the introductory physics course. *American Journal of Physics*, 70(2), 128-136. <https://doi.org/10.1119/1.1419097>

Appendix B. Articles that were rejected for a reason that needs to be explicitly mentioned, because it could appear as unclear to the reader

Reference	Reason for exclusion
Abell, T. N., & Bretz, S. L. (2019). Macroscopic Observations of Dissolving, Insolubility, and Precipitation : General Chemistry and Physical Chemistry Students' Ideas about Entropy Changes and Spontaneity. <i>Journal of Chemical Education</i> , 96(3), 469-478. https://doi.org/10.1021/acs.jchemed.8b01007	Entropy is not the core of the teaching solution, the authors focus more on general thermodynamics teaching, with no specific teaching for entropy
Banerjee, A. C. (1995). Teaching Chemical Equilibrium and Thermodynamics in Undergraduate General Chemistry Classes. <i>Journal of Chemical Education</i> , 72(10), 879-881. https://doi.org/10.1021/ed072p879	Entropy teaching is only marginally addressed, it is not the main goal of the article
DeVoe, H. (2013). A Comparison of Local and Global Formulations of Thermodynamics. <i>Journal of Chemical Education</i> , 90(5), 591-597. https://doi.org/10.1021/ed300797j	The article focusses on four examples, one of which is electrochemical, the others highlighting more enthalpy than entropy
Liff, M. I. (2010). Another Demo of the Unusual Thermal Properties of Rubber. <i>The Physics</i>	The authors aim at investigating misconceptions, not proposing a new way of teaching

<p><i>Teacher</i>, 48(7), 444-446. https://doi.org/10.1119/1.3488185</p>	
<p>Samiullah, M. (2007). What is a reversible process? <i>American Journal of Physics</i>, 75(7), 608-609. https://doi.org/10.1119/1.2721588</p>	<p>The focus of the article is to establish the link between reversibility and entropy, not to teach entropy better</p>