Entropy **1999**, *1*, 53-54

entropy
ISSN 1099-4300
www.mdpi.org/entropy/

Book Review

Symmetry in Science: An Introduction to the General Theory. By Joe Rosen (E-mail rosen@mail.uca.edu, University of Central Arkansas). Springer Verlag: New York. 1996. 234pp. $29.95. ISBN 0-387-94836-8.

Shu-Kun Lin

Molecular Diversity Preservation International (MDPI), Saengergasse 25, CH-4054 Basel, Switzerland
Tel.: +41 79 322 3379, Fax: +41 61 302 8918, E-mail: lin@mdpi.org, http://www.mdpi.org/lin/

Received: 7 September 1999 / Published: 30 September 1999

This is the most fascinating book on symmetry I have ever read. Everyone who applies the symmetry concept should read it. There are many books on symmetry. Many of them simply treat symmetry as a mathematical attribute. Rosen is the first one who firmly treats symmetry as a property of a system (very similar to a thermodynamic property). Many authors apply symmetry to structures. The author mainly discusses the symmetry evolution of processes here.

Rosen substantially develops the Curie symmetry principle: *the effect is at least as symmetric as the cause*. He puts the principle on a conceptual/theoretical foundation (bases it on the existence of causal relations in science) and applies it to processes. P. Curie's original work was published 100 years ago and not in English [1]. Rosen's symmetry principle states that *the symmetry group of the cause is a subgroup of the symmetry group of the effect*. He puts it into several forms at the end of the book on page 191. The one most closely related to the second law of thermodynamics regarding entropy is that "for a quasi-isolated physical system the degree of symmetry cannot decrease as the system evolves, but either remains constant or increases".

This book's first edition published in 1983 is also good [2]. I did not read it [2] before because I thought it was one of many symmetry books on structures. There are a number of changes in the new edition.

I recommend to my colleagues to read it. You will enjoy it!

References and Notes

1. It was translated into English also by Rosen. The English translation is collected in Rosen, J. *Symmetry in Physics: Selected Reprints*, American Association of Physics Teachers: Stony Brook, New York, 1982.
2. Rosen, J. *A Symmetry Primer for Scientists,* Wiley, New York, 1983.