Armin Bunde, Jürgen Caro, Jörg Kärger and Gero Vogl (eds): Diffusive spreading in nature, technology and society

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This book is a nicely edited and well presented compilation of the papers given at the Sixth International Diffusion conference, held at the Technical University of Dresden in August 2015. However, it is much more than a typical conference volume as the editors have carefully grouped the papers according to their major themes and have added a useful general introduction which includes an historical perspective and a succinct summary of the underlying principles and mechanisms of diffusion and spreading.

This series of conferences was initiated in Leipzig in 2005 by Professor Kärger to mark the anniversaries of the publication, in that city, of two seminal papers on diffusion by Adolf Fick (1855) and Albert Einstein (1905). Reflecting the major research focus of Professor Kärger and his group, the earlier conferences dealt mainly with diffusion and diffusive transport in fluids and solids and especially in porous media. However, the first conference also contained a notable paper by Gero Vogl (*Diffusion and Brownian Motion Analogies in the Migration of Atoms, Animals and Ideas*) in which he summarized the application of these concepts in areas well beyond their original domain. This trend has continued and it is noteworthy that over half of the papers presented at the sixth conference deal with non-traditional areas; for example, *Searching for Food of Birds, Fish and Insects* by Rainer Klages, *Interstitial Structure of*

the Brain revealed through Diffusive Spread of Molecules by Charles Nicholson, *The Neolithic Transition: Diffusion of People or Diffusion of Culture* by Joaquim Fort and *Modelling Language Shift* by Anne Kandler and Roman Unger. The result is a seminal volume that should be of interest to both physical and social scientists from a wide range of different disciplines. Although some of the articles contain moderately advanced mathematics a detailed understanding of the mathematical formalism is not essential for a general appreciation of the underlying science.

Regular readers of the journal *Adsorption* may find the articles *Diffusive Spreading of Molecules in Nanoporous Materials* by Chmelik et al. and *Nature Inspired Optimization of Transport in Porous Media* by Coppens and Ye to be of most direct relevance. The former presents a concise summary of the evolution of our understanding of the mechanism of molecular transport in adsorbents and catalysts while the latter provides a fascinating account of transport in fractal biological structures such as the lung and liver, with some discussion as to how similar ideas can be applied to the optimal design of catalysts and fuel cells.

In summary this is an excellent book which should be of lasting value to anyone who is interested this important subject.

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