

PREFACE

Research in the scientific fields covered in the title of this book, seeking a true molecular-level understanding of the structural and dynamic properties of liquid water, is clearly on the increase. To see this, one needs merely to look at the Citation Index [1] under any one of the premier publications on water. As an example, it is found that references to the book, 'The Structure and Properties of Water', by D. Eisenberg and W. Kauzmann [2], have averaged around seventy over the years. Remarkably, after a peak in 1973, four years after its publication date, citations reached a second high water mark of nearly 100 in 1994, a full quarter of a century after the first appearance of this book! It is hoped that the present book can help fill, at least for a short while, the widening gap that will always exist between new discoveries and any compendium of knowledge about water. For instance, there are currently around 150 research groups in the world with the fundamental study of water as a main emphasis. Assuming that each group publishes at least five papers per year, each day then a minimum of two new papers on water appear. This fact emphasizes the futility of remaining up to date in any book on this subject for any length of time, but we hope that most of the material covered extrapolates well into the future. In this respect, we want to express our gratitude to various friends and colleagues who, through a last minute request, supplied information that was essential to keep the book as current as possible: N. Agmon, K. Ando, P.-O. Åstrand, J. S. Bader, B. Bagchi, R. N. Barnett, L. S. Bartell, M. C. Bellissent-Funel, I. Benjamin, S. W. Benson, M. L. Berkowitz, L. Blum, J. O'M. Bockris, A. W. Castleman, S.-H. Chen, O. Cheshnovsky, P. T. Cummings, J. P. Devlin, J. C. Dore, K. B. Eisenthal, G. R. Fleming, H. L. Friedman, R. A. Friedman, S. H. Garofalini, A. Geiger, J. N. Glosli, P. Grigolini, E. Guárdia, K. E. Gubbins, B. Guillot, Y. Guissani, J. W. Halley, D. E. Hare, A. D. J. Haymet, T. Head-Gordon, K. Heinzinger, K. Hermansson, B. Hingerty, W. G. Hoover, J. T. Hynes, J. Jonas, K. D. Jordan, P. C. Jordan, W. L. Jorgensen, J. Jortner, A. G. Kalinichev, G. Karlström, P. A. Kollman, P. V. Kumar, P. G. Kusalik, E. W. Lang, T. Lazaridis, P. Linse, H.-D. Lüdemann, G. I. Makhatadze, F. Mallamace, M. Maroncelli, A. McCammon, F. F. Muguét, S. Mukamel, M. D. Newton, A. Nitzan, I. Ohmine, J. A. Padró, M. Parrinello, V. A. Parsegian, B. M. Pettitt, M. R. Philpott, L. R. Pratt, A. Pullman, B. Pullman, R. Rey, S. A. Rice, R. J. Saykally, S. Scheiner, J. Schnitker, F. Sciortino, Y. R. Shen, A. K. Soper, C. M. Sorensen, E. Spohr, M. Sprik, P. J. Steinbach, F. H. Stillinger, I. M. Svishchev, J. Teixeira, I. I. Vaisman, W. F. van Gunsteren, A. Wallqvist, G. E. Walrafen, A. Warshel, B. J. West, J. L. Whitten, P. Wiggins, K. R. Wilson, C. F. Wong, S. S. Xantheas, W.-H. Yang.

Without water, there is no civilization. We do no more than poetic justice to the liquid of which we are all composed.

Elli the sun's fiery eagle
Glides high among times
That bring truth to the many soils of Dyfed
From the wild beehives of Skellig Michael
Where anchorite echoes
Of yesterday's beating waves
Thunder to the blue and infinite sky.
There speaks time to man -
"Thus far no further!"
Wave upon wave,
A transatlantic march,
Roars and breaks on Skellig's rock,
Leaving drops of moisture
Gleaming now on Elli's brow,
Atoms, wisdom saved of toil,
That are left by tons of moving time,
Corpuscular, ineluctable, moving, water,
The slow, deep, cords of eternity,
Binding earth and ocean to the eagle's eye.

-MWE

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