Since the advent of the nuclear reactor, thermal neutron scattering has proved a valuable tool for studying many properties of solids and liquids, and research workers are active in the field at reactor centres and universities throughout the world.

This classic text provides the basic quantum theory of thermal neutron scattering and applies the concepts to scattering by crystals, liquids and magnetic systems. Other topics discussed are the relation of the scattering to correlation functions in the scattering system, the dynamical theory of scattering and polarisation analysis. No previous knowledge of the theory of thermal neutron scattering is assumed, but basic knowledge of quantum mechanics and solid state physics is required.

The book is intended for experimenters rather than theoreticians, and the discussion is kept as informal as possible. A number of examples, with worked solutions, are included as an aid to the understanding of the text.

Gordon L. Squires (1924-2010) was a Lecturer in Physics at the University of Cambridge and a Fellow of Trinity College Cambridge from 1956. He published two other books with Cambridge University Press: Practical Physics and Problems in Quantum Mechanics with Solutions, wrote an article on quantum mechanics for the Encyclopaedia Britannica and contributed extensively to leading scientific journals. From his retirement in 1991 until his death in 2010, Dr Squires was the curator of the Cavendish Laboratory Museum and wrote a number of historical articles on scientists and scientific discoveries in Cambridge.

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Appendices