The theory of one-parameter semigroups of positive operators occupies a central position in modern functional analysis, with deep connections to partial differential equations, probability theory, ergodic theory, and mathematical physics. Since its first publication in 1986, this volume has served as a foundational reference for the structural theory of positive semigroups on ordered Banach spaces.

This second edition preserves the original conceptual framework, organization, and mathematical perspective, while presenting the entire text in a fully revised, professionally typeset form. Misprints have been corrected, references updated, and a new chapter of updated notes surveys important developments from the past four decades, placing the original results in a broader modern context without compromising their historical coherence.

The book provides a rigorous and unified treatment of three core themes—characterization of semigroups via their generators, spectral theory, and asymptotic behavior—developed systematically for Banach spaces, Banach lattices, $C_0(X)$ spaces, and operator algebras. It remains an essential resource for researchers and advanced graduate students in operator theory and functional analysis.