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calculation of  
equilibrium conditions  
of multiple phases that  
are pertinent to  
chemical engineering  
processes. Efforts have  
been made throughout the

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book to provide guidance to adequate theory and practice. The book begins with a long chapter on equations of state, since it is intimately bound up with

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the development of  
thermodynamics.

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basic thermodynamics and  
nonidealities in terms  
of fugacities and  
activities, individual

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chapters are devoted to equilibria primarily between pairs of phases. A few topics that do not fit into these categories and for which the state of the art is

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not yet developed  
quantitatively have been  
relegated to a separate  
chapter. The chapter on  
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processes involve

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simultaneous chemical  
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chapters on the  
evaluation of enthalpy  
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mixtures, and on  
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used. The main objectives and the format of the Fourth Edition remain the same. The sections on momentum transfer have been greatly expanded, especially in the sections on fluidized beds, flow meters, mixing, and non-Newtonian fluids. Material has been

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