

"*Density Waves in Solids* is a definitive presentation of the properties and phenomena found in these fascinating systems, written by a leader in the field. The material is accessible to a wide audience."

—Robert Schrieffer, Chief Scientist, National High
Magnetic Field Laboratory

Density Waves in Solids is written for graduate students and scientists interested in solid-state sciences. It discusses the theoretical and experimental state of affairs of two novel types of broken symmetry ground states of metals, charge, and spin density waves. These states arise as the consequence of electron-photon and electron-electron interactions in low-dimensional metals.

Some fundamental aspects of the one-dimensional electron gas, and of the materials with anisotropic properties, are discussed first. This is followed by the mean field theory of the phase transitions—discussed using second quantized formalism—together with the various experimental observations on the transition and on the ground states. Fluctuation effects and the collective excitations are reviewed next, using the Ginzburg-Landau formalism, followed by the review of the interaction of these states with the underlying lattice and with impurities. The final chapters are devoted to the response of the ground states to external perturbations.

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Cover design by Lynne Reed



CRC Press
Taylor & Francis Group
an informa business

www.crcpress.com

ISBN 0-7382-0304-1



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**11 ■ Current Oscillations and Interference Effects
in Driven Charge Density Wave Condensates
(Reprinted in part from *Progress in Low
Temperature Physics*, vol. XII. Ed.: D.F. Brewer,
Elsevier Publishers, B.V. 1989). 198**

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