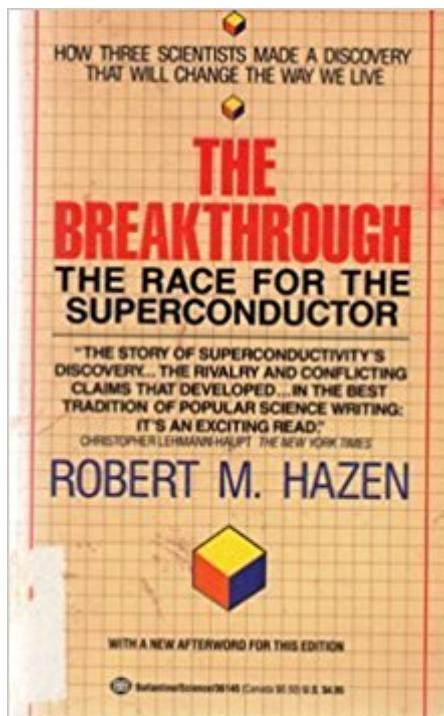


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The Breakthrough: The Race For The Superconductor



Synopsis

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Customer Reviews

With the advent of high-temperature superconductors, the world is poised on the verge of a major technological revolution. Under the former method, superconductivity (the transmission of electricity with no resistance) occurred only in materials that were expensively cooled in liquid helium to near absolute zero (459.67 F). In 1986, two IBM scientists, Johann Georg Bednorz and Karl Alex Muller demonstrated superconductivity in a metal oxide well above the previous temperature threshold. Then University of Houston physicist Paul Chu developed a new material that became a superconductor above the temperature of cheap liquid nitrogen, thus making commercial applications possible. Hazen, a physicist at the Carnegie Institution's Geophysical Lab, led the team that deciphered the structure of Chu's superconductor. Here, he recounts the enormous excitement and the scientific skullduggery that characterized the race to discover high-temperature superconductors. This well-written tale of a historic scientific discovery is bound to appeal to a wide audience. Library of Science dual main selection; BOMC, QPBC and Natural Science Book Club alternates. Copyright 1988 Reed Business Information, Inc. --This text refers to the Hardcover edition.

The 'Woodstock of Physics' was the maddening, marathon session of 3-4 thousand material and solid state physicists at the AIP meeting in NYC on March 18, 1987. The excitement was the

discovery of high temperature superconductors. Immediately after the Muller-Bednorz revelation of T_c at 30K, laboratories all over the world began to not just replicate, but to exceed 30K. The story centers around the Paul Chu group at University of Houston. The author, who was hired by Chu to reveal the structure of the material (in crystal form) is a crystallographer, so not surprisingly, provided much (exceeding for this reader) detail of the xray processes to decipher the bonds. (The chemical formula was known, but not the actual bonds). The book provides an almost day to day reporting of the exhilarating months leading up to the meeting. We learn about the often surreptitious and treacherous process of claiming first rights by publishing their work (no one wanted to be the next Elija Gray). Recognition in this case meant untold fame, glory and wealth. High temp superconductors could change our way of life, like fiber optics and lasers (but to this day has not achieved that potential, similar to cold fusion), and not some arcane, but equally impressive areas of research, such as cosmology and particle physics. This book does not deal at all with the history of the quest for superconductivity, beginning with Onnes, Van der Waals and Dewar in the early 1900's, but as far as this reader knows, is the only one written by one of the participants and lends much credibility to the first hand accounting and not by a journalist, who has to rely on sources.

I really like it. I love both its work and appearance. Super product and easy to work with I find it very satisfactory This has been a good thing all the time, and I've used it for some time and it's just as good as the first one. love them of course

This book describes very nice the first two months of 1987 where all labs around the world are investigating the crystal structure of the new discovered YBaCuO superconductor.

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