

BOOK REVIEW

Nanosciences—The Invisible Revolution

C. Joachim and L. Plévert, 113 pages, ISBN 981-283-714-0, World Scientific, Singapore (2009), \$25.00, softcover.

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This slim volume can be read within a few, probably two, hours. Translated by John Crisp from the French original published in 2008, the publishers claim this book to have two authors, the second an “independent science journalist”. Yet throughout the book are numerous suggestions in the form of first-person singular pronouns that it is really the product of the first author.

Christian Joachim is a great nanovisionary scientist of our times. His opinion is that only the science and technology of a few (perhaps less than 10) atoms or molecules should be prefixed nano. He claims that during the late 1990s, for various political reasons and under industrial pressure, the US government widened the scope to the 1-to-100-nm regime, thereby “hijacking” *nanotechnology* to create *nanotechnologies* that made a multitude of people with vested interests feel good and still do. That hijacking is a great pity—one could conclude after going through Chapter 1.

Whether one agrees or not with Joachim that this subversion of the basic concept was underhanded, there is little to dispute in Chapter 2 that Richard Feynman’s famous speech in 1959 (“There’s plenty of room at the bottom.”) did not engender nanotechnology/nanotechnologies. Chris Toumey, an anthropologist of science at the University of South Carolina, has elsewhere offered eloquent testimony that Feynman’s speech was not seminal to the emergence of nanotechnology. Similarly, neither was Eric Drexler’s book of 1986 influential.

Toumey would agree with Joachim’s assertion in Chapter 3 that the birth of nanotechnology can be dated to the invention of the scanning tunneling microscope in 1981 by Gerd Binnig and Heinrich Rohrer, with the subsequent work of Ari Aviram and colleagues (including Joachim) firmly establishing the link in the mid-1980s.

Molecular machines would require the interconnection of a few molecules. This idea of “momumentalization” came from Forrest Carter during the 1990s. Molecular wires, amperometers, and cantilevers were fabricated. Progress continues to be made. In the future, gigantic molecules will be used to manufacture molecular computing machines, according to Chapter 4.

Chapter 5 is a delightful aside (for non-biologists) to nannobacteria. Yes, there is a double-n in that word, from a Greek root and dating back to 1909 as pointed in Appendix II, not the Latin root of nano. Cell biologists may have much to offer molecular-machine researchers and *vice versa*.

In Chapter 6 issue is taken with ultra-dystopian views of nanotechnology. Whereas precautions must be taken against risk emanating from widespread adoption and use of nanotechnology, “[n]o one has the power to extinguish” “the spark that drives individuals to seek to understand the world”. Amen, says your reviewer.

A chapter-length idiosyncratic history of microscopy in Appendix I rounds off the book, along with Appendix II on nano versus nanno.

This book will be a good read, while you are reading it. Will you retain much of what you read in this book? Perhaps not. Though not chick lit (*Confessions of a Shopaholic*), it definitely is not better than chicken lit (*Julie & Julia*). *Nanosciences—The Invisible Revolution* will illuminate your funny bone.