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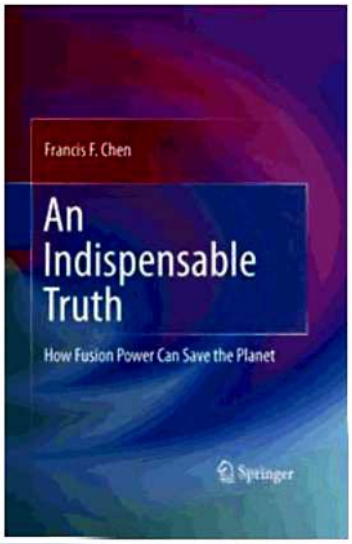
Bookmark

Fusion Energy: Not a pipe dream

-Sabina Griffith

Al Gore's book and video *An Inconvenient Truth* raised the public consciousness about the dangers of global warming and climate change. Another book has now been published that intends to convey the message that there is a solution. "A solution not only to global warming caused by anthropogenic emissions of carbon dioxide, but also to the depletion of fossil fuels and to the wars in the Middle East related to our dependence on their supply of oil," says Francis F. Chen, the author of *An Indispensable Truth*.



The new book on fusion describing the progress made in the past two decades.

In 1954, Francis "Frank" Chen was among **Lyman Spitzer's** first 15 employees at Princeton's Project Matterhorn, now known as **PPPL**. There, he instituted experiments on linear machines that led to the discovery of resistive drift waves, whose mechanism he worked out while on sabbatical at Fontenay-aux-Roses, France, in 1962-63. Two other young physicists were there at the same time: Paul Rebut and Robert Aymar, who later were instrumental in designing ITER. At UCLA since 1969, Frank opened up research on laser fusion, laser accelerators, and low-temperature plasmas. He never lost interest in magnetic fusion, however, and decided that the greatest need was to explain fusion to the public. This book is his first attempt.

Determined to tell the "indispensable truth" about fusion energy: Francis "Frank" Chen.

"Most legislators and journalists have regarded fusion as a pipe dream with very little chance of success," Chen writes in his introduction. "They are misinformed, because times have changed. Achieving fusion energy is difficult, but the progress made in the past two decades has been remarkable. The physics issues are now understood well enough that serious engineering can begin." In his book, he gives in-depth and detailed information on why he believes this to be so.

Written "for a variety of readers, from green enthusiasts with no science background to *Scientific American* magazine subscribers," Chen's book gives a comprehensive summary of the stakes of climate change and energy supply—and how controlled fusion fits into the picture. "I tried to give a concise, impartial picture of the facts," Chen writes, admitting that he himself is not an expert on climate topics. "Here I am out of depth. I get my information from the same newspapers, magazines and websites that you do. But I think it is important to put fusion in the proper context within the general scheme of the world's future."

An Indispensable Truth is both an entertaining and an informative book that manages to explain the complexity of plasma physics without using formulas. "This is an important book for anyone who wishes to understand the greatest challenge we face," writes Steven Cowley, Director and CEO of the Culham Centre for Fusion Energy, UK and one of the book's reviewers. "Frank Chen makes the science of fusion and energy clear, compelling, and hugely enjoyable."

This book can be ordered from Amazon.com for between $36 and $50 (price varies)..
A digital version can be seen on Springer.com (search "Indispensable")
A Kindle edition is available for $39.46 at Amazon.com

AN INDISPENSABLE TRUTH

How fusion power can save the planet

Francis F. Chen

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* These page numbers are only approximate because of last minute changes and automatic repagination by MS Word and Adobe Acrobat.

PART II

HOW FUSION WORKS AND WHAT IT CAN DO