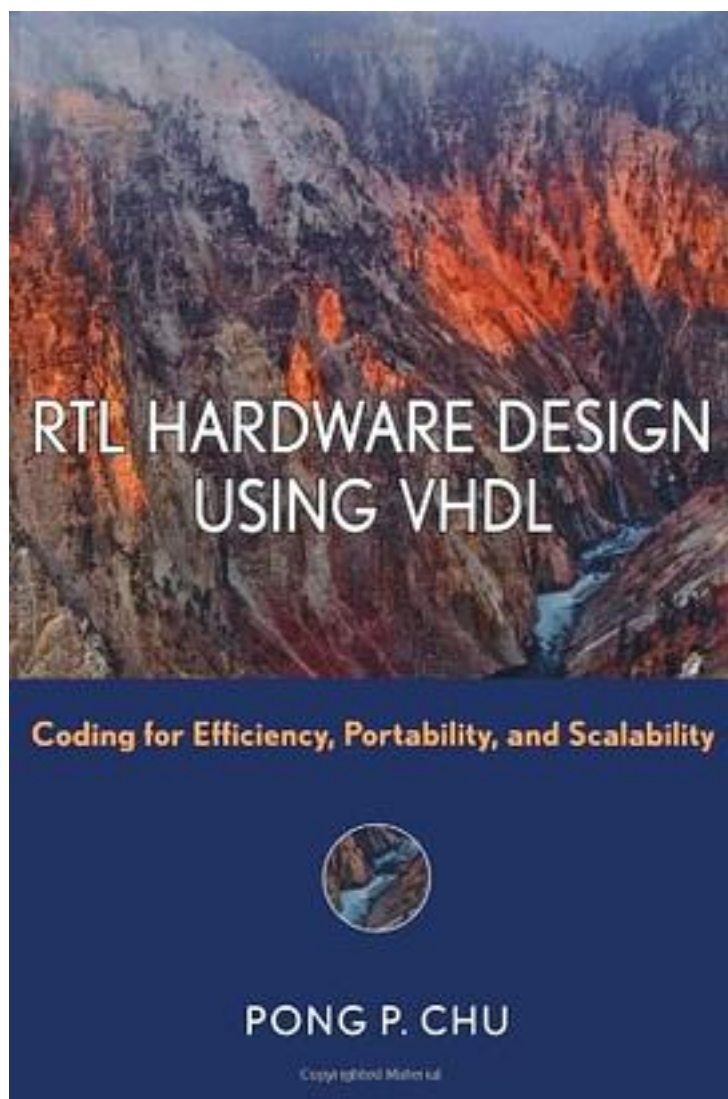# RTL Hardware Design Using VHDL

[RTL Hardware Design Using VHDL_下载链接1_](#)

著者:Chu, Pong P.

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The skills and guidance needed to master RTL hardware design This book teaches readers how to systematically design efficient, portable, and scalable Register Transfer Level (RTL) digital circuits using the VHDL hardware description language and synthesis software. Focusing on the module-level design, which is composed of functional units, routing circuit, and storage, the book illustrates the relationship between the VHDL constructs and the underlying hardware components, and shows how to develop codes that faithfully reflect the module-level design and can be synthesized into efficient gate-level implementation. Several unique features distinguish the book: Coding style that shows a clear relationship between VHDL constructs and hardware components Conceptual diagrams that illustrate the realization of VHDL codes Emphasis on the code reuse Practical examples that demonstrate and reinforce design concepts, procedures, and techniques Two chapters on realizing sequential algorithms in hardware Two chapters on scalable and parameterized designs and coding One chapter covering the synchronization and interface between multiple clock domains Although the focus of the book is RTL synthesis, it also examines the synthesis task from the perspective of the overall development process. Readers learn good design practices and guidelines to ensure that an RTL design can accommodate future simulation, verification, and testing needs, and can be easily incorporated into a larger system or reused. Discussion is independent of technology and can be applied to both ASIC and FPGA devices. With a balanced presentation of fundamentals and practical examples, this is an excellent textbook for upper-level undergraduate or graduate courses in advanced digital logic. Engineers who need to make effective use of today's synthesis software and FPGA devices should also refer to this book.

作者介绍:

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标签

VHDL

RTL

课本

计算机科学

Using

Hardware

FPGA

Design

评论

非常好的一本书，由浅入深，把很多之前学的东西都穿成了线

粗略扫过。

写的很细致，且简单易懂。

我觉得内容很不错，从规范到设计理念，虽是VHDL的，但设计理念并不涉及语言，对Verilog也适用。我的RTL入门书！！

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书评

这本书结合了电路的实际结构来讲解RTL，语言通俗易懂，例子由浅入深！
比学校的教课书不知要强多少倍！
所有的教学都围绕一个主题：可综合，高效率，可复用！ 是初学RTL的好参考~

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