

Advanced SIMPLIS Training Course (SIMPLIS 師資訓練班)

上課日期：108年3月7~9日(週四~六)，AM 9:00~PM 5:00

上課地點：新竹縣竹東鎮中興路四段195號(工業技術研究院)

費用：12,800元(107/12/30前報名者享優惠價9,800元/人；同公司三人以上(含)報名享8,800元/人)

課程簡介：

The first two days of the class will cover the following topics:

- How to create SIMPLIS models that run fast and quickly find the Periodic Operating Point
- How to parameterize a SIMPLIS model and how to create a custom Edit Dialog
- Methods to create time-domain models for critical power stage components (MOSFETs, drivers, rectifiers, inductors, and transformers)
- Fundamentals for modeling control circuits
- Essential details for conducting a comprehensive analysis of power supply performance
- Techniques for measuring time domain waveforms and AC analyses such as Bode plots, input and output impedance

The SIMPLIS Design Verification Module (DVM) is covered in depth on the third day. The DVM module automates testing, the collection of scalar and graph data, and generates an HTML report with links to the simulated data. In addition, predicting the interaction between MOSFET driver limitations and losses in power MOSFETs will be covered on the third day.

This course makes extensive use of hands-on exercises that are central to the training experience. Every student will be provided with access to a SIMetrix/SIMPLIS Pro license with DVM during the three-day class.

課程目標：

- Engineers with modest to significant experience using SIMPLIS to design switching power supplies
- Experienced users of SIMPLIS will benefit significantly from this advanced course

講師簡介：

Dr. Tom G. Wilson, Jr.

Thomas G. Wilson, Jr. (1950-) is currently President of SIMPLIS Technologies, Inc. a technology leader in simulation software for the power electronics industry. He received A.B. ('72) degree from Harvard College and his M.Eng.('74) and D.Eng ('77) degrees from University of California, Berkeley. He worked for 20 years at AT&T Bell Labs as a power supply designer, a design manager, a manufacturing manager, a marketing manager and an applications manager. In 1994, Tom left AT&T to become Chief Engineer at Zytec Corporation.

In 2000, Tom joined Transim Technology Corp. as Vice President of Engineering. In 2008, SIMPLIS Technologies was spun off from Transim. He now serves as its president.

Tom served two terms as Technical Vice President of the PELS ADCOM, was Conference Chair of APEC 97 and was a member and then Chair of the APEC Steering Committee. Tom has authored and co-authored 20 IEEE publications in the field of power electronics and holds seven US patents.

President of SIMPLIS Technologies (2000-Now)

Chief Engineer of Artesyn Technologies (1994-2000)

MTS, Supervisor, Assistant Manager, Director of AT&T Bell Labs (1974-1994)

課程內容大綱：

日期	內容大綱	時數	講師
108/3/7	<p>Module 1 - Overview of the SIMPLIS Environment</p> <p>1.0 SIMPLIS Basics</p> <p>1.0.1 SIMPLIS is a Time-Domain Simulator, all the Time, for Every Analysis, Period</p> <p>1.0.2 PWL Simulation and Modeling</p> <p>1.0.3 Multi-Level Modeling</p> <p>1.0.4 Accuracy of PWL Models</p> <p>1.0.5 POP Analysis</p> <p>1.0.6 AC Analysis</p> <p>1.1 Introduction to DVM: What is DVM?</p> <p>Module 2 - Advanced SIMPLIS</p> <p>2.0 Transient Analysis Settings</p> <p>2.1 Initial Conditions and Back Annotation</p> <p>2.1.1 The dot INIT File</p> <p>2.1.2 Back Annotating a Schematic</p> <p>2.2 How the Periodic Operating Point (POP) Analysis Really Works</p> <p>2.2.1 Overview of the POP Analysis</p> <p>2.2.2 The Core POP Process</p> <p>2.2.3 POP Syntax Errors</p> <p>2.2.4 Circuits Which Cause POP to fail</p> <p>2.3 Managing Simulation Data</p> <p>2.4 Advanced Probing</p> <p>2.4.2 Generating Per Cycle Curves</p>	18	Dr. Tom Wilson, Jr.
108/3/8	<p>Module 3 - Getting Ready to Model</p> <p>3.0 A Look under the SIMPLIS Hood</p> <p>3.0.1 What Happens When you Press F9</p> <p>3.0.2 What Actual Device is Simulated in SIMPLIS</p> <p>3.1 SIMPLIS Multi-Step Analysis</p> <p>3.2 SIMPLIS Monte Carlo Analysis</p> <p>3.3 Loading a Schematic with Component Values</p> <p>Module 4 - Introduction to Modeling</p> <p>4.0 What is a Symbol?</p> <p>4.1 What is a Model?</p> <p>4.2 What is a Schematic Component file?</p> <p>4.3 What is a Device?</p> <p>4.4 Protecting Your Intellectual Property - Model Encryption</p> <p>4.5 Debugging Slow Simulations</p>		

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108/3/8	Module 5 - Parameterization 5.0 About Parameters 5.1 Passing Parameters into Subcircuits	18	Dr. Tom Wilson, Jr.
108/3/9	Module 5 - Parameterization 5.2 Parameter-Editing Dialogs 5.2.1 Adding Basic Parameter-Editing Dialogs 5.2.2 Adding Tabbed Parameter-Editing Dialogs <u>Applications</u> Application A - DVM Applications <ul style="list-style-type: none"> ● Setting up your circuit for DVM ● Built-in testplans <ul style="list-style-type: none"> ▪ DC/DC 1-Input/1-Output testplan ▪ Efficiency ● Specialized Analyses <ul style="list-style-type: none"> ▪ Nested Multi-Step Analyses ▪ Monte-Carlo Analysis ▪ Combining Efficiency and Loop Characterization in one Test Suite Application B - Switching Losses and Measuring Efficiency Course Reference: http://www.simplistechnologies.com/training/2018/10/17/santa-clara-ca		

適用產業：電力電子、電源供應器、電能轉換器、變壓器等相關產業。

研修對象：研發工程師 產品設計師 生產製造工程師 維修工程師
研究員 技術人員 品管測試工程師 其他 _____

教育程度：專科電機電子領域以上。

技術背景：具(1)電路分析；(2)工業電子、電力電子或應用電子學基礎。

授課方式：講授、實作、討論。

★本課程參訓者請攜帶筆電，以利課程習作。

工业技术人才培训课程报名表

编 号:		填表日期:	
姓 名		性 别	<input type="checkbox"/> 男 <input type="checkbox"/> 女
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连 络 人		联系人/E-Mail	
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■ 报名请填写妥此表后, 传真至: 03-5820275 或 E-Mail至: wtp@itri.org.tw 或 shho@itri.org.tw

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■ 洽询电话: 03-5914259彭小姐 或 03-5917880何小姐