

数字后端实训——Cadence DSG Workshops (INNOVUS)

培训时间： 2021 年 4 月 21 日~4 月 22 日(9:00 AM –6:00PM) (2 天)

培训地址： 深圳南山区科技中二路软件园一期四栋六楼-国家集成电路设计深圳产业化基地 615 室

培训老师： 张洋， **Cadence** 数字后端实现高级资深应用工程师

毕业于复旦大学，2011 年加入 Cadence，现为 Cadence 数字后端实现领域的专家，负责数字后端实现工具 Innovus 的技术支持和推广。专注于应用 Innovus，在先进工艺以及高性能设计中，PPA 提升、功耗优化、时钟树优化、绕线优化以及缩短迭代时间。

在先进工艺节点 N16/N10/N7/N5，以及超大规模芯片的实现方面，有着丰富的实战 TO 经验，帮助多个国内外大客户完成芯片的实现和签收。

顾薛平，数字后端实现高级应用工程师

2019 年加入 Cadence，现为 Cadence 数字后端实现领域的专家，负责数字后端实现工具 Innovus。专注于 PPA 提升，在时序，功耗，拥塞，时钟树，DRC 等领域有深入的研究。

在先进工艺节点 N16/N12/N7/N5，以及超大规模芯片和超高性能芯片的实现方面，有着丰富的实战 TO 经验。

主办单位： 深圳集成电路设计产业化基地管理中心 cadence

联系人： 关保贞 手机微信 13651442415 邮箱 guanbz@szicc.net

课程安排：

Cadence DSG Workshops Agenda *Innovus*

#	Workshop Names	Time Range	Lecturer
4/21	<u>Innovus</u> Implementation System -- Session 1	9:15 – 11:45 AM	张洋 (Yang Zhang)
	<u>Innovus</u> Implementation System – Session 2	2:15 – 3:30 PM	顾薛平 (Xueping Gu)
	<u>Innovus</u> Implementation System – Lab Session	3:30 – 5:45 PM	
4/22	<u>Innovus</u> Implementation System --Session 3	9:15 – 11:45 AM	张洋 (Yang Zhang)
	<u>Innovus</u> Implementation System --Session 4	2:15 – 3:30 PM	顾薛平 (Xueping Gu)
	<u>Innovus</u> Implementation System – Lab Session	3:30 – 5:45 Pm	

Innovus Implementation System

Course Objectives

In this course, you learn how to

- Import and floorplan your design
- Place the standard cells and blocks in the design
- Run power planning, power routing, and power analysis
- Reorder scan chains
- Analyze routing congestion
- Extract parasitics and generate timing reports
- Create clock trees
- Optimize and close timing
- Analyze how to optimize routing with technology (LEF) and design files
- Route critical nets with shielding and spacing
- Edit wires using the interactive wire editor
- Analyze and fix routing violations
- Report and fix timing and signal integrity violations
- Implement an Engineering Change Order (ECO)
- Explore database access commands

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Innovus Implementation System

Course Agenda

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| <ul style="list-style-type: none">• About this Course• Innovus Implementation System Overview• Design Import and Customizing the Innovus Implementation System Environment• Selecting and Highlighting Objects in the Design• Floorplanning the Design<ul style="list-style-type: none">▪ Importing a Design▪ Using Bindkeys▪ Tearing Off Menus▪ Clearing the Floorplan▪ Initializing the Floorplan▪ Customizing the Menus▪ Checking the Design | <ul style="list-style-type: none">• Planning Power• Routing Power with Special Route<ul style="list-style-type: none">▪ Floorplanning a Design• Running Placement Optimization• Scan Optimization and Reordering• Analyzing Route Feasibility with Early Global Router<ul style="list-style-type: none">▪ Running Placement▪ Running the Early Global Router• Multi-Mode Multi-Corner Analysis• Extracting Parasitics and Running Timing Analysis<ul style="list-style-type: none">▪ Extracting RC Data▪ Running Timing Analysis and Generating a Slack Report• Power, Performance and Area Optimization |
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Innovus Implementation System

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防疫事项:

1. 参加培训的学员在报到当天应主动向工作人员出示“行程码”，“行程码”14 天内无中高风险地区行程史。学员应确保 14 天内无国内疫情中高风险地区或国（境）外旅居史、无新冠肺炎确诊病例、疑似病例或无症状感染者密切接触史。现场测量体温正常（ $<37.3^{\circ}\text{C}$ ）、无咳嗽、乏力等不适症状者方可进入会场。参加培训的学员应自备一次性医用口罩或无呼吸阀的 N95 口罩，除身份确认需摘除口罩以外，应全程佩戴，做好个人防护。会场签到桌配备速干手消毒剂，纸面巾或湿纸巾，学员可以自行取

用。