Call For Workshop

W1: Texas Instruments C2000 DSP Code Developments Using MATLAB/Simulink and Code Composer Studio v5

کدنویسی ریزپردازنده‌های DSP خانواده C2000 با استفاده از نرم‌افزار MATLAB/Simulink

و Code Composer Studio v5

Dr.Seyed Mohammad Madani, Mohammad Reza Agha Kashkooli,Ramtin Sadeghi
Department of Electrical Engineering, University of Isfahan

Objectives:

Real-time code development for C2000 DSP in Simulink
Implementing various algorithms using Simulink
Utilizing all DSP peripherals such as: ADC, PWM, QEP, SCI, ...

Contents:

1 - C2000 DSP Introduction

2 - Configuration of Matlab & Simulink for DSP code development

3 - Code development for a simple program (LED Blink) in Simulink

4 - Downloading the developed code into DSP using CCS v5

5 - Digital Motor Control (DMC) library introduction

6 - Constant V/f control of a 3-phase AC induction motor using Fixed Point DSP

7 - Constant V/f control of a 3-phase AC induction motor using Floating Point DSP

Tuesday 16 Feb. 2016 (27 Bahman)

08:00h-12:30h

Registration fee for ordinary participants: 1,000,000 Rials - Students: 500,000 Rials

Departement of Electrical Engineering, Iran University of Science and Technology, Tehran, Iran
Website: pedstc2016.iust.ac.ir **E-mail:pedstc2016@iust.ac.ir**
Tel:77240487 **Fax:77240486**

Call For Workshop

W2: EMC of Power Electronics and Drives

سازگاری الکترومغناطیس در الکترونیک قدرت و محرکه‌های الکتریکی

Prof. Dr. Jean-Luc Schanen
Grenoble Institute of Technology, France

Objectives:
Understanding the EMI generation in power electronics systems
EMC approach for switching cell design
EMC filter design and optimization

Contents:
1) Introduction: EMC basis (45min) Definition Coupling modes Standards DM/CM: the EMC referential

2) EMC Filter design (2h15) Filter topology Filter design: conventional method Imperfection of filter elements, Imperfection of cables EMC simulation: time vs frequency approach Filter Optimization: methodology and example

3) EMC of Power Module (3h00) Impact of stray elements on the switching phenomena Interconnection modeling: PEEC method, analytical formulas Applications Using stray elements

Tuesday 16 Feb. 2016 (27 Bahman)
09:00h-12:00h and 14:00h-18:00h

Registration fee (With Lunch) for ordinary participants: 1,500,000 Rials - Students: 750,000 Rials

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Call For Workshop

W3: FPGA Programming Using MATLAB/Simulink

برنامه‌ریزی مدارهای FPGA با استفاده از نرم‌افزار MATLAB/Simulink

M. Rezaei-Larijani, Dr.Mohammad Reza Zolghadri
Department of Electrical Engineering, Sharif University of Technology

Description:

FPGA based controllers are becoming a usual practice for Power electronic converters and drives. This Workshop introduces a method to program FPGA ICs by Simulink blocks which is inserted by Xilinx software, ISE, in the Matlab. It can be used as the initial steps for programming FPGA or for initial verifications and settings of FPGA based systems. In this method the programming FPGA is as easy as simulating a circuit in the Simulink of Matlab. FPGAs will be introduced and some issues like fixed point and floating point calculations using FPGA will be discussed. This will be presented by designing a FPGA based controller simulated in Matlab to control a switching converter. In the second part, generation of Verilog code using Simulink toolboxes will be presented. Various examples such as saw tooth wave generation, PWM signal generation as well as design and implementation of a PI controller for a switching converter will be explained.

Tuesday 16 Feb. 2016 (27 Bahman)

14:00h-18:00h

Registration fee for ordinary participants: 1,000,000 Rials - Students:500,000 Rials

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Call For Workshop

W4: Application of Power Electronic in the Railway Industry (Metro)

کاربرد الکترونیک قدرت در صنعت راه‌آهن (مترو)

Mohammad Farzi
Jahad Danshgahi Elm va San'at (JDEVS)

Objectives:

1) Introduction and Orientation of electric rail lines
2) Electrical facility in metro
3) Propulsion systems and power electronics applications in Rolling Stock
4) Related research orientations

Contents:

1) Preface (power feeding line in metro)

2) Power feeding equipment in metro
- **2-1- Transformers**
- **2-2- High power diode rectifiers**
- **2-3- DC protection switches**

3) Propulsion systems and power electronics applications in Rolling Stock
- **3-1- Motor Converter Module or Variable Voltage and Variable Frequency (MCM Or VVVF)**
- **3-2- Auxiliary Converter Module (ACM)**
- **3-3- Standalone equipment**
- **3-4- Train Control and Monitoring System (TCMS)**

4) Related research orientations

Tuesday 16 Feb. 2016 (27 Bahman)
14:00h-16:00h

Registration fee for ordinary participants: 1,000,000 Rials - Students: 500,000 Rials

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