TEQIP-III SPONSORED
SHORT TERM COURSE
ON
HARDWARE SECURITY AND ITS APPLICATIONS
[HSA 2018]

6th March – 10th March, 2018

Course Coordinators:

Dr. Bibhash Sen
Dr. Mamata Dalui
Dr. Suchismita Roy

Organized By

Department Of Computer Science and Engineering
NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR

Mahatma Gandhi Avenue Durgapur – 713209
West Bengal, India

Website: www.nitdgp.ac.in

INTRODUCTION

The huge growth in computer and electronics industry provides cheaper, faster, low power devices, but with this faster growth in technology security threats are also increasing at an unanticipated rate. The hardware provides the root of trust to any device, the software system running on a device trust the underlying hardware to provide the expected security. The workshop concentrates on different kinds of hardware threats, safeguards and the recent trends of hardware security. The electronic industry keeps introducing reliable, high functional, low-cost product within a short period of interval. Protecting the IP core and keep the IC out from threats is becoming more challenging. New innovative technologies are introduced to verify the security of these underlying hardware to keep up the rapid technology growth. The conventional cryptographic algorithms are computation intensive and suspect to some advanced attacks. The hardware-based encryption technology is an active area of research to overcome these hurdles. This workshop/course will focus on hardware-based security solution, different kinds of hardware threats, relates them to the present technology and presents potential solutions to address them. Due to the above facts, in recent years there is major thrust among the international community to organize international conferences, workshops etc. in this research area. Keeping this in mind we propose to offer short a course on Hardware Security with an objective to provide a forum to exchange ideas, discuss solutions, and share our experiences with researchers, professionals, and application developers working or planning to initiate research in this domain of Hardware Security.

WHO CAN ATTEND HSA 2018

HSA 2018 is aimed to attract and bring together Faculty Members, Teaching Assistants and Research Scholars from Academic and Institutions recognized by AICTE, UGC or equivalent.

TOPICS TO BE COVERED

1. PUF: A physical unclonable function, or PUF, is a "digital fingerprint" that serves as a unique identity for a semiconductor device such as a microprocessor. PUFs are based on physical variations which occur naturally during semiconductor manufacturing, and which make it possible to differentiate between identical semiconductors. PUFs are usually utilized in cryptography. Today, PUFs are usually implemented in integrated circuits and are typically used in applications with high security requirements.

2. Hardware Trojan: A Hardware Trojan (HT) is a malicious modification of the circuitry of an integrated circuit. A hardware Trojan is completely characterized by its physical representation and its behavior. The payload of an HT is the entire activity that the Trojan executes when it is triggered. In general, malicious Trojans try to bypass or disable the security fence of a system: It can leak confidential information by radio emission. HTs also could disable, derange or destroy the entire chip or components of it.

3. Counterfeit IC detection: Counterfeit Integrated Circuits (ICs) is a major threat to the current electronic supply chain and the customer of electronic products. Not only the supply chain, but the use of counterfeit ICs can jeopardize the national security system in many ways. So Counterfeit IC detection involves implementation of various methodologies for their detection.

4. IP Watermarking, IP Finger printing : *Watermarking and Fingerprinting both are the identification codes permanently embedded as an integral part within a design for intellectual property protection of Hardware.*

RESOURCE PERSONS

1	Dr. Anirban Sengupta	IIT Indore
2	Dr. Dipanwita Roy Chowdhury	IIT Kharagpur
3	Dr. Rajat Subhra Chakraborty	IIT Kharagpur
4	Dr. Bibhash Sen	NIT Durgapur
5	Dr. Suchsmita Roy	
6	Dr. Mamata Dalui	

ABOUT THE INSTITUTE

National Institute of Technology (NIT) Durgapur is a leading institute offering undergraduate, post graduate and post-doctoral programs in various disciplines of engineering, technology, science, social science and management. The education system is holistic with equal importance being attached to all-round development of the students. NIT Durgapur was established as a Regional Engineering College (REC) in 1960 as a joint venture of the Government of India and Government of West Bengal. REC Durgapur was converted to NIT Durgapur under the full administrative and financial control of the Ministry of Human Resource Development of the Government of India with a Deemed University status on 3rd July, 2003. Subsequently NIT Durgapur has been given the status of a University by the UGC Act. The Institute was declared as an Institute of National importance by The Government of India on 15th August, 2007.

PROGRAMME FEES:

Faculty from Academic Institution:	INR 2500
Participants from R&D Institution :	INR 4000
Research Scholars:	INR 2000
Post-graduate students:	INR 2000
Participants from Industry and other organizations :	INR 6000

MODE OF REGISTRATION:

Demand Draft should be drawn in favour of "DIRECTOR NIT DURGAPUR" Payable at Durgapur.

OR

Credited directly to the <u>**Account Name**</u>**: ETV II Hardware Security,** <u>**A/c No**</u>**. 8569101003091, Canara Bank, Durgapur Nit Campus Branch,** <u>**IFSC**</u>**: CNRB0008569.   Micr Code: 713015203.**

HOW TO APPLY:

1. Submit the requisite fee for the course.

2. Fill the registration form (Annexure I) and send it to the below address:

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Course Coordinator (ETV II Hardware Security)
NATIONAL INSTITUTE OF TECHNOLOGY, DURGAPUR
Department of Computer Science and Engineering
Mahatma Gandhi Avenue Durgapur – 713209
West Bengal, India

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2. Please send a scanned copy of your registration form and payment details to hsa2018.nitdgp@gmail.com in advance.

3. Participants are also encouraged to fill the registration form using the following link for accommodation and registration intimation in advance.

https://docs.google.com/forms/d/e/1FAIpQLSdo1-LoMH1_ZJUBQrbe3RsAddCQaoF33NPlNdme9LNdOo9mPw/viewform

Last Date of Registration: 28th February, 2018.
*For any workshop related queries mail at: hsa2018.nitdgp@gmail.com

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PATRON:

Prof. Anupam Basu
Director
NIT Durgapur, West Bengal

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CHAIRPERSON:	COORDINATORS:
:	
Prof. Goutam Sanyal	**Dr. Bibhash Sen (Ph. 943478816))**
Head,	**Dr. Mamata Dalui (Ph. 9434788122)**
Department of CSE,	**Dr. Suchismita Roy(Ph. 9434789011)**
National Institute of Technology Durgapur,	
Durgapur, West Bengal, India –	**Department of CSE**
713209	NIT Durgapur
	Mahatma Gandhi Avenue,
	Durgapur-713209
	Email: **hsa2018.nitdgp@gmail.com**

Annexure I

Name (in Block Letters): …………………………………………………………………………..

Designation: …………………………………………………………………………………………..

Organization: …………………………………………………………………………………………

Sex (Male / Female): …………………………………………………………………………………

Address for correspondence: …………………………………………………………………………

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Mobile No: ……………………………………………………………………………………………

Email Id: ………………………………………………………………………………………………

Registration Fees : ……………………………………………………………………………………

Demand Draft / Transaction Number: ………………………………………………………………..

Date:

Tick whichever applicable: *Faculty/ Participants from R&D Institution/ Research Scholars/ Post-graduate students/*

Participants from Industry and other organizations

Full Signature of the applicant with date

SPONSORSHIP CERTIFICATE

The applicant is hereby sponsored and will be permitted to attend the above short-term course, if selected.

Date: Signature and seal of the sponsoring authority.