

# WORKSHOP ON HARDWARE SECURITY AND ITS APPLICATIONS [HSA 2018]

## Registration Form:

Name (In capital letters): .....

Designation: .....

Organization: .....

Address for correspondence: .....

Mobile No: .....

Email id:.....

Registration Fees: .....

D.D. No:.....

Date:.....

Click whichever applicable:

- Faculty
- Participants form R&D Inst.
- Research Scholar
- Post Graduate Student
- Industry &Other

Place: .....

Date: .....Signature of Applicant

### **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

# A scan copy of this form can be mailed to  
[hsa2018.nitdgp@gmail.com](mailto:hsa2018.nitdgp@gmail.com) in advance.

### Who can attend HAS 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.

### How to apply

Registration fee by Demand Draft in favors of Director NIT Durgapur payable at Durgapur along with duly filled in registration form should reach the coordinator on or before 28<sup>th</sup> February, 2018. Photocopy of the registration form can be used for registration. A confirmation mail will be sent to each registered participant by 2<sup>nd</sup> March 2018.

### Registration Fee

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	INR 6000

### Patron:

Prof. Anupam Basu, Director, NIT Durgapur

### Chairman:

Prof. Goutam Sanyal, HOD, CSE Dept., NIT Durgapur

### Advisory Committee:

Prof. Sudip Chattopadhyay, Dean, (RC)  
Prof. Ajit Kumar Meikap, Coordinator, TEQIP-III  
Prof A. K. Banik, Nodal Officer, TEQIP-III  
Prof. Nilotpal Banerjee. , Dean (Student Welfare)

### Important Dates:

Last date of application submission:	28 <sup>th</sup> Feb 2018
Date of Notification (web)	16 <sup>th</sup> Jan 2018
Date of confirmation (email)	2 <sup>nd</sup> Mar 2018

### Contact person:

Dr. Bibhash Sen, 9434788161, [bibhash.sen@cse.nitdgp.ac.in](mailto:bibhash.sen@cse.nitdgp.ac.in)  
Dr. Suchismita Roy, 9434788122, [Suchismita.roy@cse.nitdgp.ac.in](mailto:Suchismita.roy@cse.nitdgp.ac.in)  
Dr. Mamata Dalui. 9434789011, [mamata.dalui@cse.nitdgp.ac.in](mailto:mamata.dalui@cse.nitdgp.ac.in)

### Address for correspondence

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# WORKSHOP ON HARDWARE SECURITY AND ITS APPLICATIONS [HSA2018] 06-10 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](http://www.nitdgp.ac.in)

## 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.

## About the workshop

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.

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

**5. IP Digital Forensics, IP Obfuscation**

## Resource person

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	

## Accommodation:

Boarding, lodging and travel expenses shall be borne by the participants. Limited shared accommodations can be made (on request) in the Institute Guest House and hostels (if available) on first come first served basis. Several good hotels are available in and around Durgapur. Participants may contact directly or through the coordinator(s) for accommodation in Guest House/Hotels. No TA/DA will be paid to the participants by NIT Durgapur.

For any query, you can send email to [hsa2018.nitdgp@gmail.com](mailto:hsa2018.nitdgp@gmail.com)

[Online payment system will be activated soon.](#)