ADMISSIONS OPEN FALL 2024
MS Electrical Engineering Specialization
in Integrated Circuits (IC) & Systems

"A Training from Idea to Product Design"

Department of Electrical Engineering at FAST-NUCES ISB offers an MS program with expertise in Integrated Circuits and Systems .Pioneer and most mature IC Design MS program in Pakistan, student will do the real-world tape out from project conception to the working silicon microchip.

WHY INTEGRATED CIRCUITS (ICs) DESIGN ?

• High demand for skilled IC designers in global 500 Billion $ industry
• Recent IC design center established in the Public Sector Organizations.
• More than six IC startups in Pakistan over the last two years.

WHY from FAST NUCES ?

• First and most established program in Pakistan having licensed Cadence tools suite and TSMC 28nm, 65nm, 130nm, & 180nmPDKS.
• 8 graduate level courses purely related to IC Design, covering all domains of IC Design from Analog, Digital, Mixed Signal.
• All of the MS ICD batches have 100% employment track record.
• More than 200 hours training of graduates on Cadence Tool Suite.
• Program tailored to train engineers in 2 semesters for Semiconductor Industry entry.
• Proven track record of more than a dozen fabricated graduate projects in Pakistan with three graduate student batches.
• International collaboration with Si-Valley company.
• Active collaboration with International Universities.

Feedback from Alumni and Industry

• The courses were specifically designed to provide the students with a strong knowledge of electronics and IC design skills. (Dr. Nasir, Sr Director, NECOP)
• This program is perfect for Engineers seeking in-depth training from concept to tape-out in analog and digital IC design. (Aziz ur Rehman GM, NECOP)
• One thing I must say! After working with the faculty, if you put your whole effort too, you will be a practical Chip designer. (Hamza Saleem, MS IC)
• The program offered me a variety of skills including design, plan, management, economy, and art of designing practical Integrated circuits, (M Usman, MS IC)

Teaching and Technical Staff

Prof. Dr. Rashad Ramzan
M.S. Royal Institute of Technology Stockholm, Germany
Ph.D. Linkoping University, Sweden
Professor at Department of Electrical Engineering
FAST, NUCES, ISB.

Dr. Hassan Saif
M.S. & Ph.D. Sungkyunkwan University, South Korea.
Asst. Professor at Department of Electrical Engineering
FAST, NUCES, ISB.

Engr. Aqsa-Ehsan
MS EE
Design Engineer
FAST, NUCES, ISB.

Engr. Fari-ud-Din
Lab Engineer
FAST, NUCES, ISB.

HOW TO APPLY

• Apply Online at
  • http://admissions.nu.edu.pk/
  • Or Scan QR Code
• For more details about MS IC design
• and our research group please visit
  http://isb.nu.edu.pk/rfcs2/
Info: hassan.saif@nu.edu.pk

Application Deadline: 30 June 2024

PROGRAM AND COURSES OUTLINE

Integrated Circuits Master's Program

Semester-1 Fall 2024	Semester-2 Spring 2025	Semeter-3 Fall 2025	Semester-4 Spring 2026
1. Research Methodology 2. Digital Integrated Circuits 3. Analog & DT ICs 4. Elective-I	1. Mixed Signal IC 2. Elective-II 3. Elective-III 4. Elective-IV	1. MS Thesis/ Project (Part 1) or 3. ElectiveV 4. Elective-VI	1. MS Thesis/ Project (Part 2)

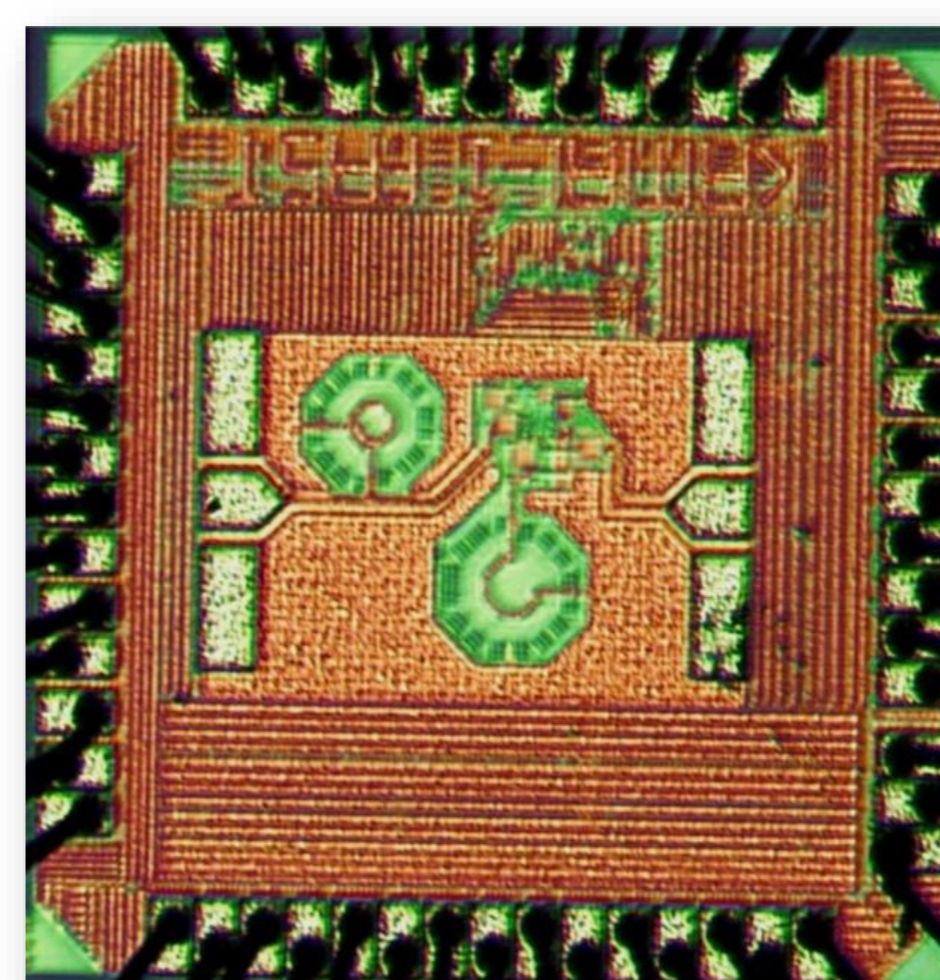2 Semester (Morning Program) On-Campus Course Work (Aug-2024 to June-2025)

Students Free to Join Industry:
Option-1: Opt indutrial project. No campus visit
Option-2: Opt thesis, 8-16 hours/week on-campus
Option-3: 6 credit course work (Degree completion in 3 Semesters.

Note: Electives are selected depending on the type of specialization i.e. Analog , Digital, RF or verification.
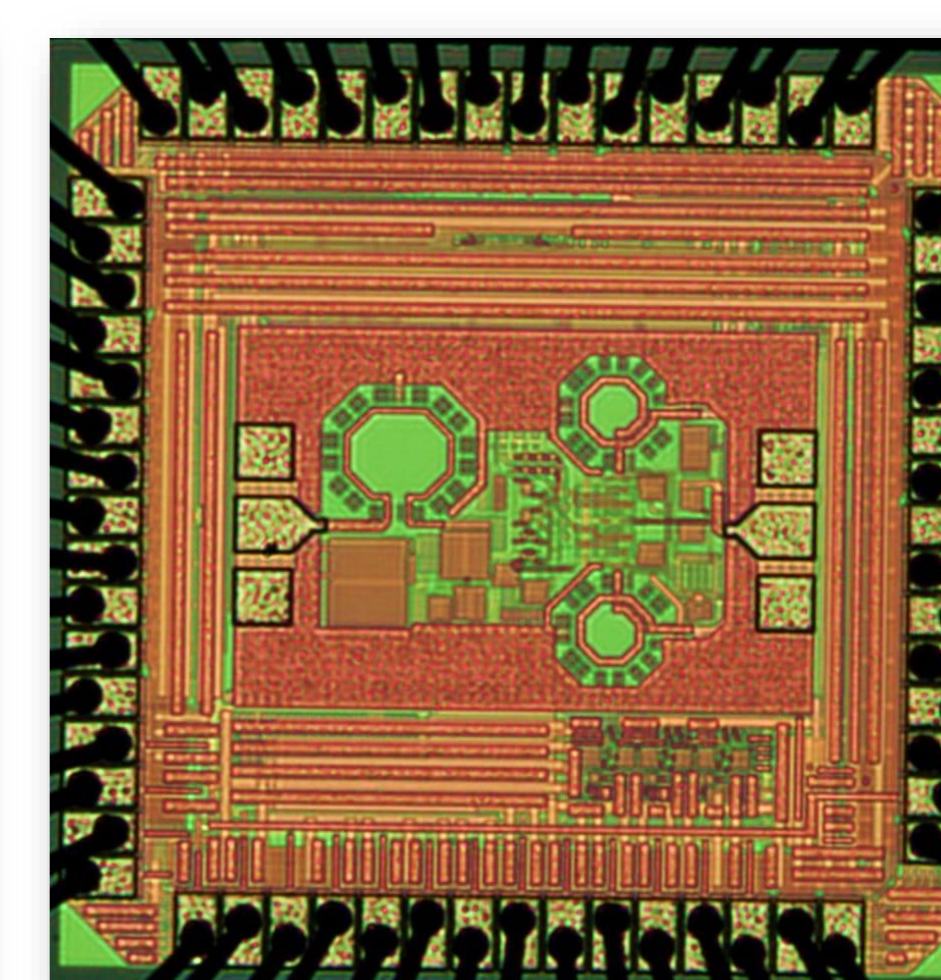
20 Graduate Students Tapeout Projects (Sessions 2021, 2022, & 2023)
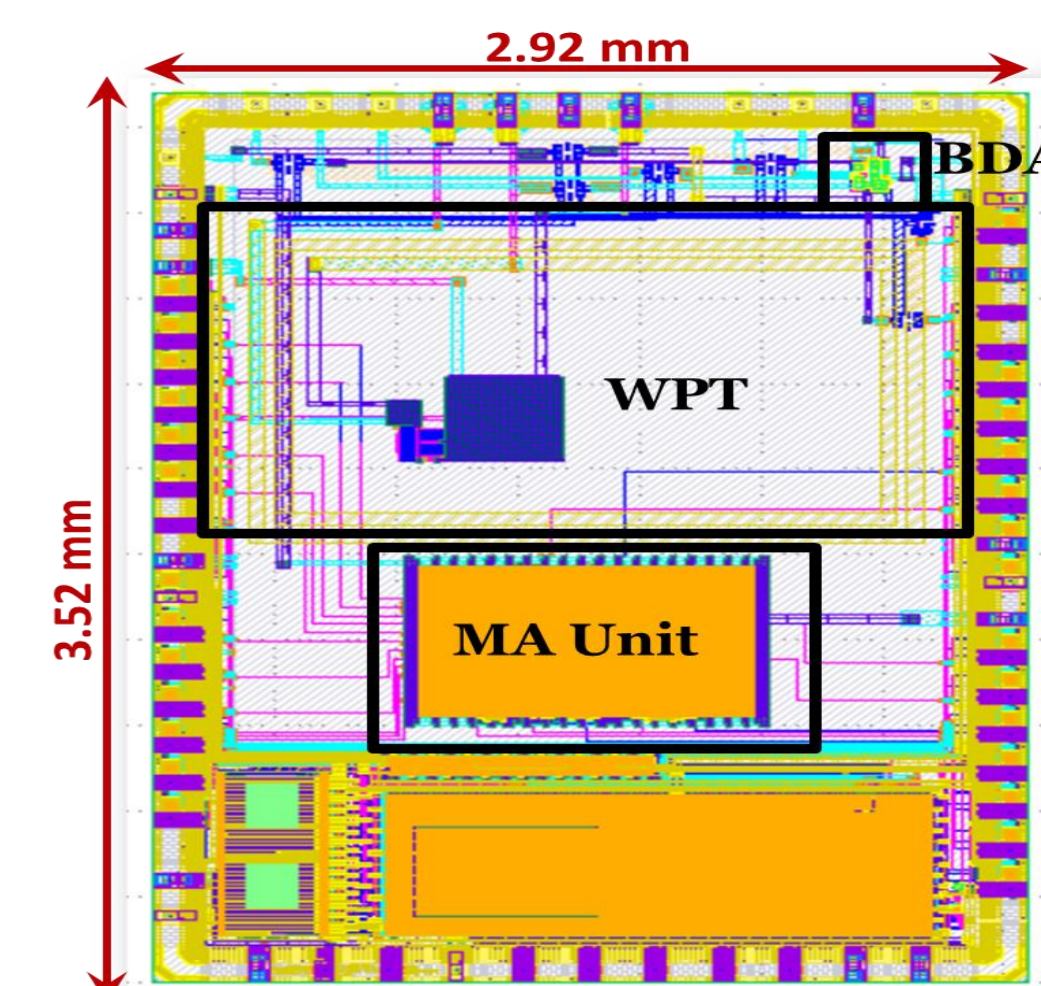
TSMC 65nm Tapeouts 2021
Kamal-1   Kamal-2
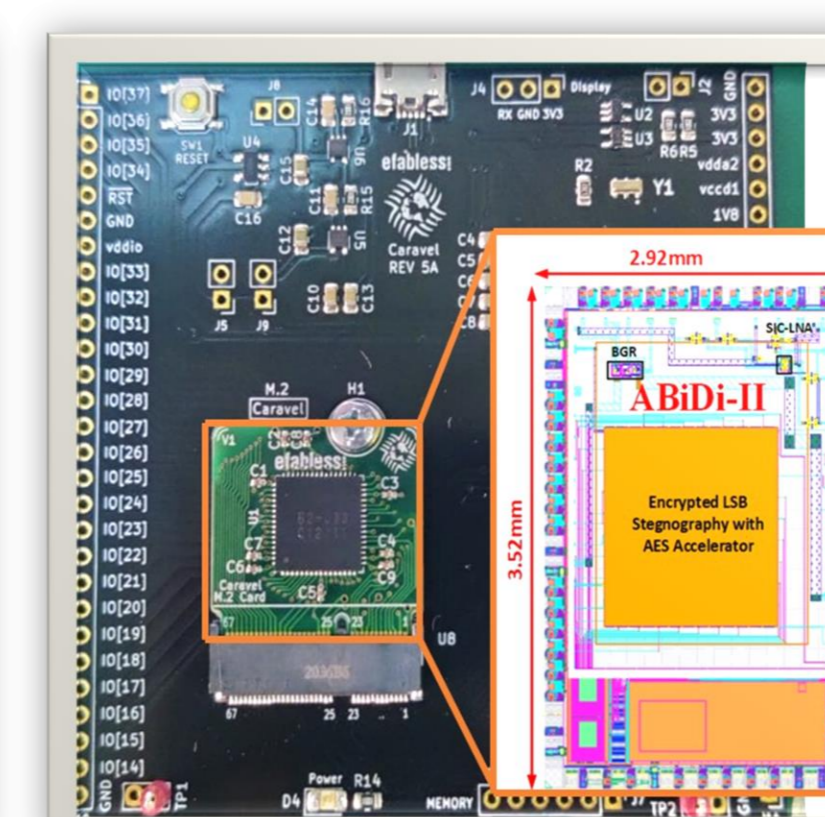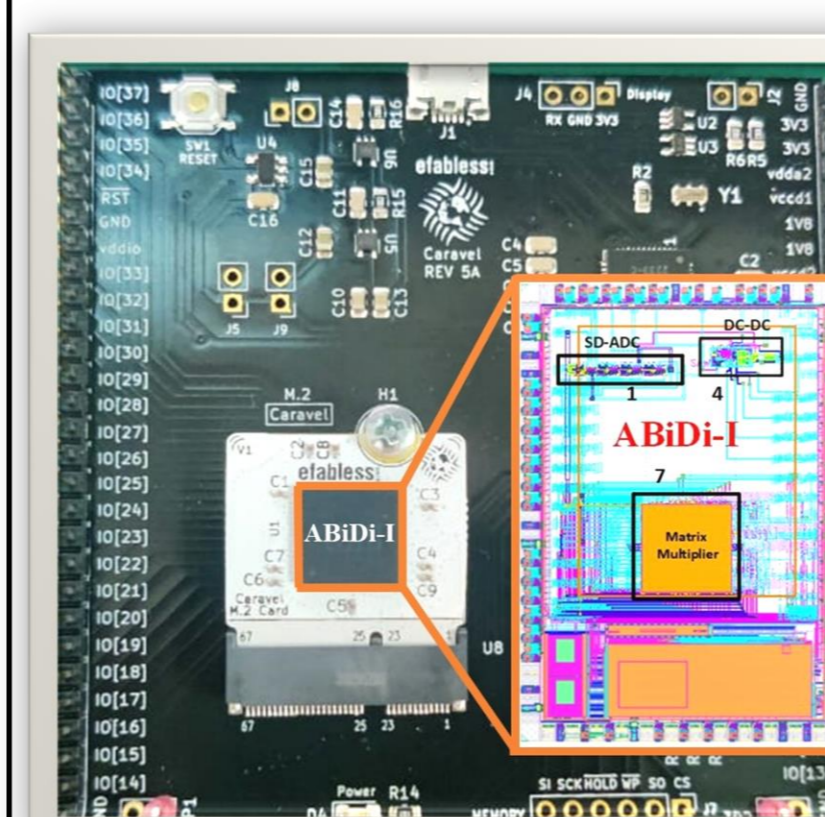
PICO 130nm Tapeouts 2021

1) Approximate ALU, 2) mm-Wave LNA, 3)Triboelectric Energy Harvester, 4) AC Logic, 5) mm-Wave Phase Shifter, 6) Sigma-Delta ADC 7) True Random Number Generator, 8) Configurable Logic Block, 9) Bi-Directional Amplifier, 10) WPT, 11) Multiply-Add Unit

PICO 130nm Tapeouts Nov, 2022

PICO Accepted Tapeouts 2023

IEEE SSCS Open-Source Ecosystem Chipathon 2023
List of Accepted Projects:

ELIGIBILTY

• Bachelor from PEC recognized University in: (Min CGPA=2.5)
 – Electrical/Electronics Engineering
 – Mechatronics Engineering
 – Telecommunication Engineering
 – Computer Engineering

Scholarships Criteria

• Selection Procedure
Step1: NUCES MS EE Admission Test
 GAT or GRE are not valid for MS ICD program
Step2: NUCES, Islamabad IC Design Lab Test/Interview