


Rayat Shikshan Sanstha's
Annasaheb Awate Arts, Commerce & Hutatma Babu Genu Science College,
Manchar, Tal. Ambegaon Dist. Pune 410503

Department of Electronic Science
Best Practice Report- 2022-23
Wallpaper / Poster Presentation by Students

Event Name	Wallpaper / Poster Presentation
Co-Ordinator	Ms. Afroj M Dange & Ms. Jayshree B Khilari
Objective	<ul style="list-style-type: none">• To cultivate out-of-the-box thinking, such as inter-disciplinary thinking, synthesising knowledge of different disciplines and to cope with complexity among students.• To ensure the knowledge acquisition among the student community.• To make them understand the emerging concepts from known concepts.• To stimulate in-depth learning of the concepts and understanding of various topics.
The Context	<ul style="list-style-type: none">• This event is to provide an opportunity for the students to share their knowledge with the peer group members.• The digital poster is prepared in advance with the desired technical framework to share the knowledge on inter-disciplinary fields.• This activity will lead to encourage the students to participate in symposia, technical presentations.
Evidence of Success	<p>The outcome of this practice enables the students to</p> <ul style="list-style-type: none">✓ Participate in a technical presentation✓ Project Expo✓ Participate in skill-oriented competitions
Challenging Issues	<p>Resources are the main challenge for participation in the competition.</p> <ul style="list-style-type: none">• For the success of such practices require attitude and willingness without which it is difficult to motivate students, which is the target audience of the Institute.• The degree of motivation required in the minds of the students can result in the success of such practices.
Enclosure	Articles by the students




Head
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• Designing a VLSI-IC

The design[←] of a VLSI IC consists broadly 2 parts.

Front end design includes digital design using HDLs such as Verilog, VHDL, System Verilog and the like. It includes design verification through simulation and other verification techniques. The process includes designing, starting

From gates to design for testability. Backend design

Comprises of CMOS library design and its characterization.

It also covers physical design and Fault simulation. The

entire design procedure follows a step by step approach.

The Front end design steps would involve, Problem

Specification, Functional Design, Logic Design, Architecture

Definition, Circuit Design, physical design, Backend

hardware development, wafer processing, Lithography

Etching, Ion implantation, Metallization, Assembly and

Packaging.

VLSI has many advantages -

The increase in density happens through multiple developments. Some of which would be a reduction in size, management in power consumption among others.

- Reduce the size of circuits.
- Reduces the effective cost of the devices.
- Increase the operating speed of circuits.
- Requires less power than discrete components.
- Higher reliability.
- Occupies a relatively smaller area.

• Which Software is used For VLSI ?

Software tools : Synopsys, Mentor Graphics, Xilinx, Keysight ADS, Keysight IC-CAP, Synopsys Advanced TCAD, Silvaco TCAD 3D, Silvaco AMS, QTS TCAD Framework and QuantumWise ATK. Open Source Tools : OOMMF, QCADesigner, spice3F5, BSIM4 and Quantum Espresso.

What is meant by VLSI Technology?

Very-large-scale integration (VLSI) is the process of creating an integrated circuit (IC) by combining thousands of transistors into a single chip. VLSI began in the 1970s when complex semiconductor and communication technologies were being developed. The microprocessor is a VLSI device.

* Who invented VLSI?

The history of VLSI started way before 60 years when, Jack Kilby invented "Integrated circuit" in 1958. Integrating more electronic components (mainly transistors) on a single semiconductor base is known as Integrated circuit.

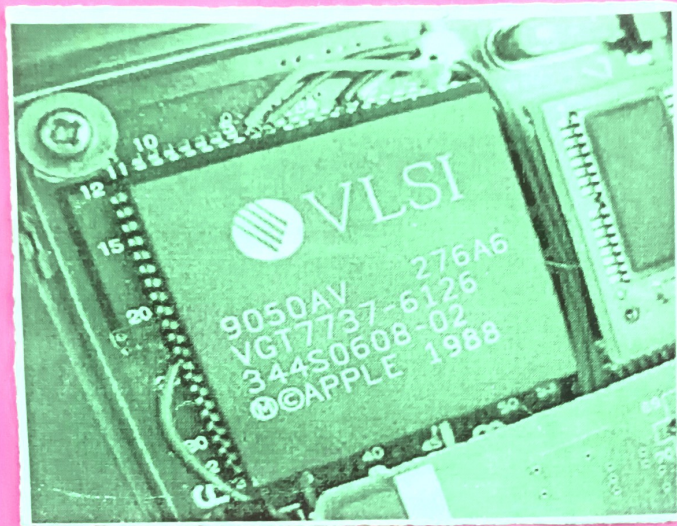
* What is VLSI used for?

VLSI is one of the most widely used technologies for microchip processors, integrated circuits (IC) and component designing. It was initially designed to support hundreds of thousands of transistors gates on a microchip which, as of 2012, exceeded several billion.

* What is VLSI and its applications?

VLSI circuits are used everywhere, real applications, include microprocessors in a personal computer or workstation, chips in a graphic card, digital camera or camcorder, chips in a cell phone or a portable computing device, and embedded processors in an automobile.

VLSI



Very-large-scale integration (VLSI) is a process of combining thousands of transistors into a single chip. It started in the 1970s with the development of complex semiconductor and communication technologies.

A VLSI device commonly known, is the microcontroller. Before VLSI, most ICs had limited functions. An electronic circuit usually consists of a CPU, ROM, RAM and other peripherals on one board. VLSI lets IC designers add all of these into one chip. Let's look into the backstory of VLSI development before going into specifics.