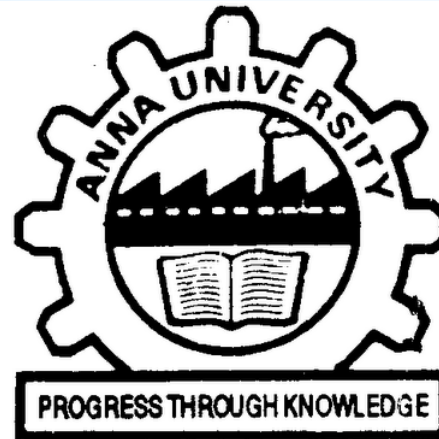
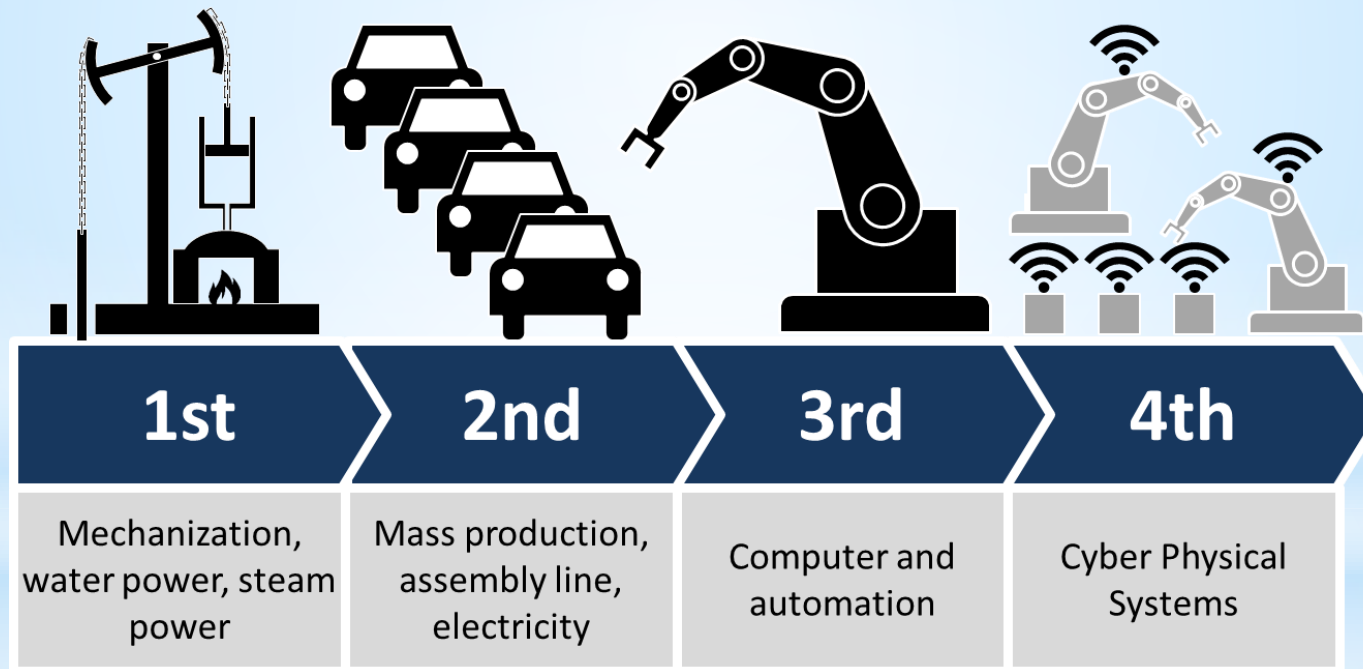


# *Industry 4.0 Technology*



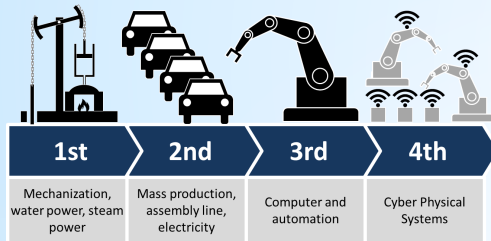
*Department of Manufacturing Engineering  
College of Engineering Guindy  
Anna University  
Chennai - 600 025*

# Industry 4.0



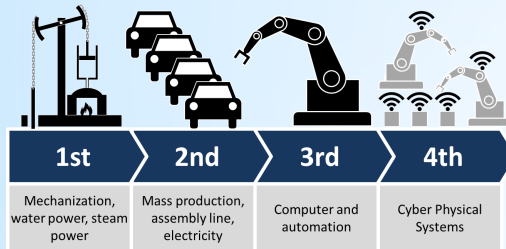
❖ Industry 4.0, or the fourth industrial revolution, is the current trend of automation and data exchange in manufacturing technologies.

# Industry 4.0



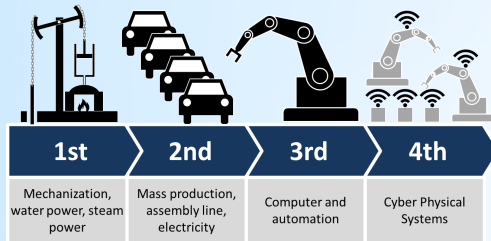
❖ It includes cyber-physical systems, the Internet of things and cloud computing.

# Industry 4.0



❖ Industry 4.0 creates what has been called a "smart factory". Within the modular structured smart factories, cyber-physical systems monitor physical processes, create a virtual copy of the physical world and make decentralized decisions.

# Industry 4.0



❖ Over the Internet of Things, cyber-physical systems communicate and cooperate with each other and with humans in real time, and via the Internet of Services, both internal and cross-organizational services are offered and used by participants of the value chain.

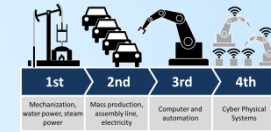
# Facilities available

Sl.No.	List of Equipments available
1	CNC Multipurpose Micro Machine Tool
2	CNC Wire Cut Electro Discharge Machine
3	CNC Turning Centre
4	Non Contact Surface Roughness Tester
5	Physical Vapor Deposition Unit
6	Resin Transfer Moulding System
7	Abrasive Waterjet Machine
8	CNC Electro Chemical Micro Machine
9	Fanuc Robot

# Facilities Required - Phased manner

Sl. No.	Name of Equipment	Cost in Rs.
1	LASER Engineered Net Shaping Equipment	10 Crores
2	Diamond Turning Machine and Roughness, Form and 3D Measuring System	6 Crores
3	5 axis CNC Machining Centre with Cutting force Dynamometer	3 Crores
4	Machine Vision System	1 Crore

# Industry 4.0

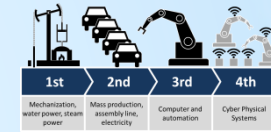


## FEATURES

- ❖ Interoperability – machines, devices, sensors and people that connect and communicate with one another.
- ❖ Information transparency – the systems create a virtual copy of the physical world
- ❖ Technical assistance – to humans in making decisions and solving problems
- ❖ Decentralized decision-making – the ability of cyber-physical systems to make simple decisions



# Industry 4.0



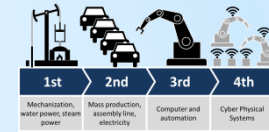
## CHALLENGES

- ❖ Data security
- ❖ proprietary production knowledge
- ❖ A high degree of reliability and stability
- ❖ Maintaining the integrity of the production process with less human oversight could become a barrier.
- ❖ Loss of high-paying human jobs
- ❖ Avoiding technical problems that could cause expensive production outages is always a concern.

*(Bernard Marr, Forbes)*

2016

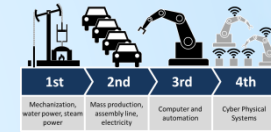
# Industry 4.0



## DIFFICULTIES

- ❖ Systemic lack of experience and manpower to create and implement these systems
- ❖ General reluctance from stakeholders and investors to invest heavily in new technologies.

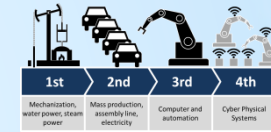
# Industry 4.0



## ADVANTAGES

- ❖ Useful in very dangerous working environments
- ❖ Supply chains could be more readily controlled
- ❖ Computer control could produce much more reliable and consistent productivity and output.
- ❖ And the results for many businesses could be increased revenues, market share, and profits.

# *Industry 4.0*



The question, then, is not if Industry 4.0 is coming, but how quickly.

*-Bernard Marr*