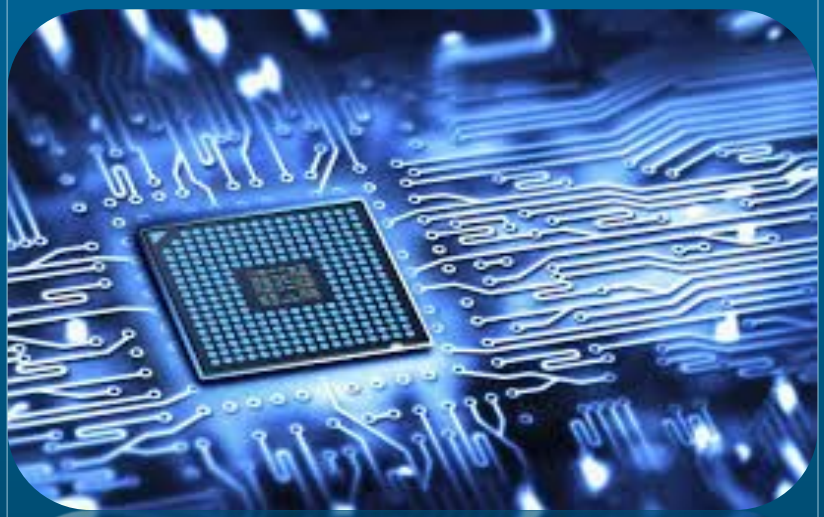
September-2021

Electro-Nation

" BE The **BEST** version of **YOU** "



New Trends
In Electronics...

New Research In Electronics

SNJB's Late Sau. Kantabai Bhavarlalji Jain
College of Engineering ,Chandwad Dist.Nashik
NAAC Accredited with 'A' Grade

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Department of E&TC Engineering

Vision of the Department

To prepare Electronics & Telecommunication engineers for the benefit of the society.

Mission of the Department

M1 To provide quality education to students.

M2 To enrich the skill in collaboration with industry for better career opportunity.

M3 To inculcate ethics, values and environment awareness

Program specific outcomes

PSO1 Apply their skills in designing, implementing and testing electronic systems.

PSO2 Demonstrate proficiency in use of modern electronic design automation (EDA) tools.

PSO3 Communicate and work effectively as individuals and as team members.

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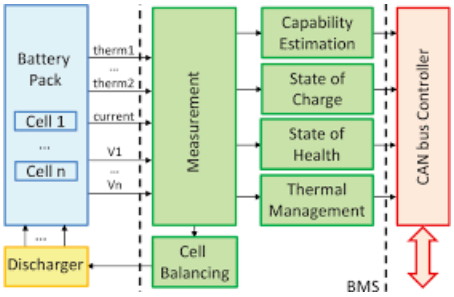
Battery Management System for EV Battery

NXP Semiconductors, Texas Instruments, Analog Devices, Infineon Technologies and others are rolling out more advanced battery management chips at the heart of hybrid and electric cars. BMS can squeeze every drop of energy from the battery cells in electric cars and protect them from harm or losing charge capacity prematurely. According to industry, improvements in these battery monitors can extend the driving range of an EV by around 5% to 10% in a single leap.

As the automobile industry confronts the looming electric vehicle (EV) era, many of the world's top car manufacturers are trying to design batteries that are safer, charge faster and have more energy. Every EV is packed with as many battery cells as possible to increase the capacity of the modules and packs housing them.



Every cell in the battery pack must be wired to a battery management IC that is used to watch over the voltage, current and temperature of all of the battery cells crammed in a module to keep them from expending precious energy. The capacity of lithium-ion battery cells diminishes over time and usage so every cell in the system needs to be managed and regulated to keep it within a safe charge level and boost performance.

Every EV today has several major building blocks. The onboard charger, or OBC, is used to convert AC current to the DC current required to recharge the battery pack. The traction inverter is used to convert DC from the battery pack into AC to propel the main electric motor driving the EV, playing the same role as a traditional engine management system (EMS). The dc-dc converter inside the EV pulls power from the battery and steps down the voltage to supply loads to electronics such as headlights, power windows, seat controls and side mirrors.

The battery management system, or BMS, acts as the brains of the battery pack in the car by carefully managing the output, charge and discharge of the battery during its lifetime. The system also accurately monitors each independent battery cell and the pack housing them to ensure that they are operating safely. The system also has safeguards to protect the battery from permanent damage. It balances out the levels of charge in the battery to increase the range per charge as well.

Li-ion batteries, which powered the global revolution in consumer electronics, pack lots of energy into a small package, have slow self-discharge rates and handle high voltages. But despite its overall advantages, the lithium-ion formulations currently in use are a huge cost. The battery pack is by far the single most expensive component in electric vehicles. Battery costs have long been the major challenge to making electric cars affordable for the masses. A battery currently accounts for 25% to 40% of the EV's cost, analysts estimate.

While the Li-ion battery is the most expensive component in electric cars, it is also among the most fragile. They can become a safety hazard because they sport flammable substances, and if they are damaged or incorrectly charged or drained, they can overheat uncontrollably in a "thermal runaway" that can result in smoke, fires or even explosions. Sudden surges in voltage or temperature and short-circuits can also have harsh consequences.

To prolong the battery's life and protect it from damage, the BMS needs to continuously assess the state of charge (SOC) and state of health (SOH) of the cells and the modules and packs housing them. The SOC is a measure of the remaining charge in the battery compared to its total charging capacity, ranging from 0% (completely empty) to 100% (fully charged). The state of charge informs the driver how long the electric vehicle can last on its remaining charge.

The SOH represents the remaining lifespan of the battery by comparing its current status to its factory specifications. In general, lithium-ion batteries roll out of a production plant at 100% before losing storage capacity over time due to the stress of continuous charging and discharging. Once the battery capacity become insufficient for EVs, they need to be replaced.

But because repairing or replacing the battery packs can cost many thousands of dollars, auto manufacturers are trying to prolong the battery's total capacity for as long as possible.

Source-URL: https://www.electronicdesign.com/power-management/media-gallery/21150953/battery-management-ics-giveelectric-vehicle-batteries-a-boost

Dr.R.K Agrawal
HoD (E&TC Dept.)

Artificial intelligence driven security cameras

Uttar Pradesh government is set to go ahead with the smart city project implementation with rollout of artificial intelligence driven security cameras to help women in distress.

Under the project, which is in line with Centre's flagship Smart City program, the Lucknow police will deploy security cameras with facial recognition technology that will read expressions of women in distress and alert their nearest police station.

The project initiated under the Mission Shakti program will read facial expressions of women in distress through artificial intelligence (AI) based technology and will look to reduce cases of harassment of women who are subjected to stalking and threat in the city.

So far the Lucknow police department has identified 200 hotspots where the movement of women was maximum in the city and from where most of the complaints were received. The police will initially deploy five AI-based cameras to recognize the expression of women citizens. The facial recognition technology is touted to alert the nearest police station of women in distress even before they call the police helpline. It will activate the cameras upon detecting facial expressions of women and trigger the system to notify the police.

Dr.R.K Agrawal
HoD (E&TC Dept.)

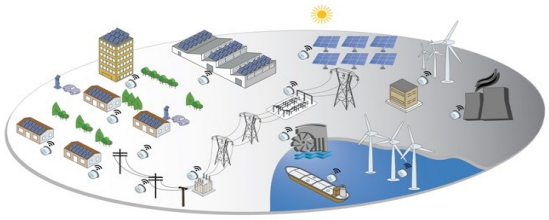
Smart Energy System

Introduction

The development of this concept in power networks leads to optimal network control, optimal use of equipment, increased quality and reliability of power supply, facilitation of the integration of renewable energy sources (RES), optimal planning of the transmission and distribution systems, the development of the use of distributed generation (DG) and reduced system's costs. However, in the past years, this concept has only been developed on the power grid and does not provide an accurate understanding of real energy systems.

Purpose of smart energy system

A Smart Energy System is defined as an approach in which smart electricity, thermal and gas grids are combined with storage technologies and coordinated to identify synergies between them in order to achieve an optimal solution for each individual sector as well as for the overall energy system The Smart Energy System concept is essential for cost-effective 100% renewable energy systems. The concept includes focus on energy efficiency, end use savings and sector integration to establish energy system flexibility, harvest l by using all infrastructures and lower energy storage cost.



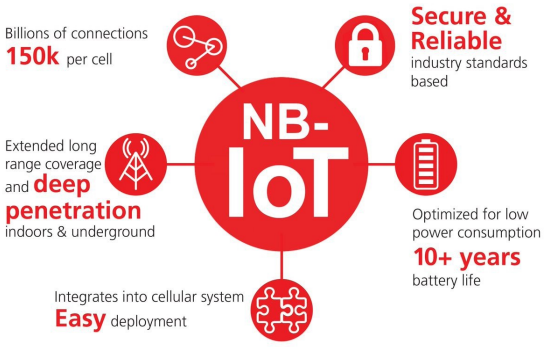
Future Energy System

Energy savings and 4th generation district heating can be combined, creating significant benefits. Low-temperature district heat sources, renewable energy heat sources combined with heat savings represent a promising pathway as opposed to individual heating solutions and passive or energy+ buildings in urban areas. Electrification in combination with district heat is a very important driver to eliminate fossil fuels. Power heat, power to gas and power to liquid together with energy efficiency and 4th generation district heating create a flexible smart energy system. These changes towards integrated smart energy systems and 4th generation district heating also require institutional and changes that address the implementation of new technologies and enable new markets to provide feasible solutions to society.

-Ms.Komal Pawar
(TE E&TC)

Jio : NB-IoT Network

NB-IoT is a new technology standard, designed to broaden the future of IoT connectivity, providing significantly improved and deeper network coverage for communication between machines while lowering power consumption by device.
Reliance Jio pan-India IoT network based on **narrowband IoT** technology was launched in partnership with South Korean major Samsung.



Jio was aiming to connect at least a billion connected IoT devices to its Internet of Things (IoT) platform. In electricity segment, Jio has successfully conducted trials with various DISCOMs to provide smart metering solutions.

Jio is also looking to tap the smart city space with its smart lighting solutions. Jio said that its Connected Diesel Generator solution has already been rolled out with pilots underway with DG OEMs and Facility Management companies.

Jio revealed that its pilot is in progress for smart solution for a major hospitality. It will soon launch smart monitoring solution comprising indoor and outdoor camera for home and offices. Jio is also launching its secure streaming and Cloud storage in India.

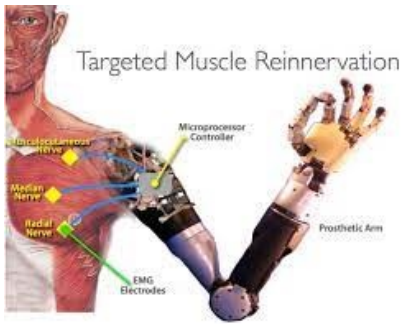
The telco is betting big on home automation under its "Jio smart living" suite which includes safety, security and convenience sensors. Jio is planning to launch a complete suite of IoT devices included smart speakers, smart bulbs and smart switches.

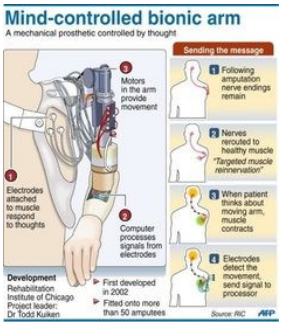
Dr.R.K Agrawal
HoD (E&TC Dept.)

Bionic Limbs & Prosthetic Technology

Introduction to Bionic Limbs:

Bionic limbs are artificial limbs that work by using signals from an individual's muscles to seamlessly move. Some bionic limbs also rely on electrical signals from the brain and nerves in order to create the proper movements. These limbs, such as bionic hands, are either electronically or mechanically powered, with some bionic options relying on a combination of both. Whereas traditional prosthetic limbs require complete body power to work, bionic limbs provide much more support and capability by using both muscles and the brain to power them.





How Do Bionic Limbs Work?

Bionic limbs typically work by detecting signals from the user's muscles. For example, when a person puts on their bionic limb and flexes the muscles above or below the limb, sensors will react to elicit the appropriate movement. Bionic limbs are often equipped with sensors to detect these muscle movements. So, for example, say you have a bionic arm. When you put on the arm, you flex the muscles you normally would to open your hand. This sends a signal to the sensors in the bionic arm to flex the hand.

Most bionic limbs have built-in computers that detect the muscle signals. Some bionic limbs require sensors to be implanted into the remaining muscles of the limb stump. This type of bionic limb is much more advanced and can allow users to control the limb with their minds. For example, you may think about moving your leg and your bionic leg will respond by moving.

Many bionic limbs are considered "plug and play," which means they can be put on and taken off with ease and used only when needed. Bionic limbs do not require surgery to work, but many limbs are custom-built to the specifications of the users' muscles.

This type of prosthetic limb gives users maximum control and adapts to how quickly or slowly the muscles tense. When the muscles are tensed more gently, the bionic limb will respond slower. When muscles are tensed quickly, the limb will react faster.

Difference between the Prosthetic Limb and Bionic limb?

There is a significant difference between prosthetic and bionic limbs. Cosmetic prosthetic limbs, which are the basic prosthetic products available, provide very little or no functionality and are simply worn to give a natural appearance of a limb. These limbs are not able to actively move, and they require the user to rely on their body to move the limb.

Functional prosthetics are a step up from cosmetic or passive prosthetics but still require body power to move. Functional prosthetics are typically available in both body-powered and electrically powered forms, with the electrically powered option relying on batteries and motors to power movements. This type of prosthetic will react based on detected muscle movements in the residual limb or upper body.

A bionic limb gives the user much more control and movement through the use of sensors and computers that respond to both thoughts and muscle movement. This functionality takes much of the workload off of the user's body and acts more like a real limb. Ultimately, bionic limbs provide much more ease and functionality when compared to traditional prosthetic limbs and require less effort from the user.

Source: Scheck & Siress

-Mr.Vivek Pawar
(TE E&TC)

Facts About Mobile Manufacturing

Indian Mobile manufacturer	Lava, Micromax and Karbon
India's second largest electronics manufacturer	Dixon Technologies (makes smartphones for LG, Nokia and Motorola)
Chinese Mobile manufacturer	One Plus, Xiaomi, Oppo, Vivo and Realme. Honor
South Korean Mobile manufacturer	Samsung
	Apple
	LG,
	Nokia Motorola
Mobile Chipset	Qualcomm (American) (Snapdragon 4-series) MediaTek (Taiwanese) (Dimensity series) Intel AMD
Top chip maker	Taiwan Semiconductor Manufacturing Co Ltd (TSMC)
Top memory chip maker	Samsung Electronics Co Ld.

Siemen’s Digital twin: a virtual representation of a physical product

A digital twin is a virtual representation of a physical product that can help understand and predict the physical counterpart's performance characteristics. Digital twins are used to simulating, predict, and optimize the product and production system before investing in physical prototypes.

Ola has partnered with Siemens to leverage the latter's technology at its upcoming electric SCOOTER manufacturing facility in Tamil Nadu.

Ola's factory will be built on Industry 4.0 principles and will be the most advanced manufacturing facility in the country. It will have almost 5,000 robots deployed across various functions.

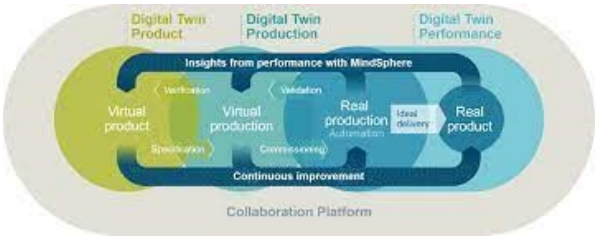
As part of the partnership, Ola will have access to Siemens' integrated 'Digital Twin' design and manufacturing solutions to digitalize and validate product and production ahead of actual operations, it added.

The factory will be artificial intelligence-powered with Ola's proprietary AI Engine and tech stack deeply integrated into every aspect of the manufacturing process, continuously self-learning and optimizing every aspect of the manufacturing process.

This will provide unprecedented control, automation and quality to the entire operations, especially with Ola's implementation of cyber-physical and advanced Internet of Things systems.

Ola said the entire material handling at its factory would be fully automated for maximum efficiency - right from raw materials to materials movement inside the factory, to the storage, to the finished scooter rolling

The factory is expected to generate almost 10,000 jobs and, with an initial capacity of 2 million units a year. It will serve as Ola's global manufacturing hub catering to its customers in India as well as key markets across Europe, U.K., Latin America and ANZ.

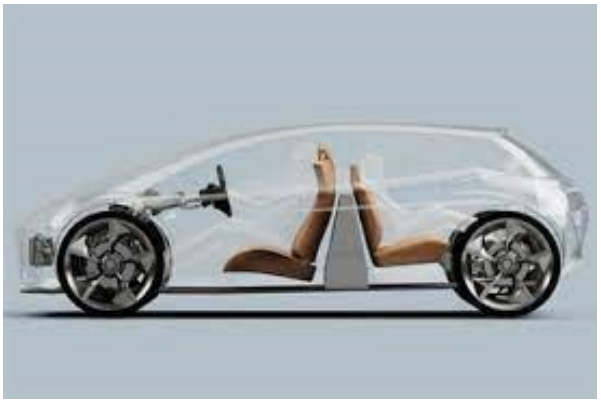


Dr.R.K Agrawal
HoD (E&TC Dept.)

New EV Design Concept

Start-up Page-Roberts has unveiled a patented design concept for an electric vehicle that's capable of travelling up to 30% further than current EVs. Most electric vehicle (EV) designs see the car's batter placed under the floor and it's been a convenient way to package sufficient battery energy in order to develop an acceptable range. There are, however, a number of drawbacks with this arrangement according to start-up Page-Roberts which has recently unveiled a new and patented design concept that looks to drive EV efficiencies by combining a 'cutting-edge engineering solution' with much greater design flexibility. According to Page-Roberts CEO, Freddy Page- Roberts, "We have been looking to do something very different. While the skateboard arrangement found in current electric vehicles has become the mainstay this has resulted in taller vehicles with increased aerodynamic losses and energy consumption. There's also a need for extra structure to protect against impact and a longer wheelbase to account for the battery."

As a consequence the increased size and weight required has dramatically inhibited the range of current electric vehicles. "The arrangement we've come up delivers a smaller, lighter and safer electric vehicle with a significantly enhanced range for an equivalent battery energy size," explained page-Roberts, "and now we are in a position to talk to OEMs, investors and UK industrialists."



Manufacturing costs cut ,When it comes to manufacturing, the company claims that costs can be cut by as much as 36% as a result of this unique battery arrangement. Our design avoids expensive aluminium or composite structures to compensate for the additional mass and poor structural complexity of the traditional skateboard platform used in most EVs. A 20% reduction in battery energy for a given range significantly reduces build cost and weight, while standardised lighter components lead to a virtuous circle of reduced complexity, weight and cost," said Page-Roberts,

These significant efficiency gains can also be translated into electric vehicles that have a far smaller carbon footprint– the ability to design vehicles with smaller batteries reduces the impact at the start of a vehicle's life and makes recycling the batteries easier

-Ms.Poonam Wagh
(TE E&TC)

Optic Fiber: Backbone of Digital Infrastructure

Optic-fiber cable or OFC contributes a major pie of the Indian telecom carriers expenditure on creating digital infrastructure which is also a backbone to achieve Centre's ambitious Digital India vision.

Following the demand triggered by service providers' aggressive Fiber-to-the-Home (FTTH) strategy, and upcoming fifth generation (5G) networks, the predominant optic-fiber producers are planning boost the production capacity.

India's top fiber manufacturers -- Sterlite Technologies and HFCL Limited -- are banking on Prime Minister Narendra Modi's prestigious Digital India umbrella program that aims to achieve 100% tele-density, broadband for all, and fiber-based national backbone called Bharat Net for seamless delivery of public services.

India's 5G upcoming commercial launch, and current FTTH strategies of telecom companies such as Reliance Jio, Bharti Airtel and Bharat Sanchar Nigam Limited (BSNL), and pan-India Bharat Net initiative would accelerate OFC demand further.

Currently, the country's fiber deployment rate is at 4 lakh kilometers annually, and less than a third of a total of 6.25 lakh telecom towers are fiberized today making India to trail behind many countries worldwide. In South Korea, nearly 70% of the sites have been fiberized while in the US, Japan, and China combined, close to 75% towers have been fiberized.

Between 2020-2023, India is likely to invest nearly Rs 450 billion in telecom tower fiberization the London-based research firm EY said.

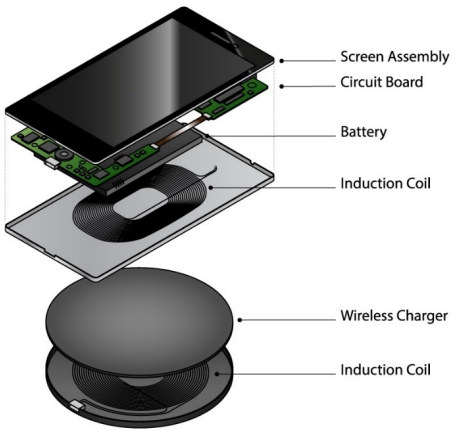
Considering the nationwide optic-fiber deployment key to data networks, the Department of Telecommunications (DoT) has already set up a target to deploy 5 million fiber kilometers by 2024. India has presently a network spanning around 2.8 million fiber kilometers.
Last August, the Centre laid out a strategy to connect 6 lakh villages over the next 1,000 days with optical fiber for the delivery of high-speed data services.

In 2019, telecom companies and OFC manufacturers have sought incentives to encourage fiber penetration citing it as a critical telecom infrastructure which according to them, is prerequisite to the 5G commercial rollout in the country.

Dr.R.K Agrawal
HoD (E&TC Dept.)

Wireless Charging

Mobile phones and tablets have allowed us to stay in touch regardless of our location, yet they still rely on plugs, sockets, and charging pads to power up. New technology developed at Aalto University may be the key to true wireless charging for these and other electronics in years to come. The research team includes researches Dr. Prasad Jayathurathnage and Dr. Xiaojie Dang, and professors Sergei Tretyakov, and Constantin Simovski. The findings are published in IEEE Transactions on Industrial Electronics on 21 July 2021.While researchers around the globe are working on free-position wireless charging -which would unchain devices from set charging points -- the most common solutions involve complex control and detection functions. A transmitter traditionally has to first detect a device presence and position to be able to send energy in its direction, usually done with cameras or sensors, adding bulk and cost to the device.



The new transmitter bypasses this need by creating power transfer channels in all directions ,automatically tuning channels when receiving devices are in motion. Devices like phones, laptops, and other small appliance equipped with a new receiver can simultaneously receive energy to charge batteries or directly power their functions -- without ever being in physical contact or being brought to a specific place.

The new transmitter bypasses this need by creating power transfer channels in all directions ,automatically tuning channels when receiving devices are in motion. Devices like phones, laptops, and other small appliance equipped with a new receiver can simultaneously receive energy to charge batteries or directly power their functions -- without ever being in physical contact or being brought to a specific place. ' What sets this transmitter apart is that it' s self-tuning, which means you don't need complex electronics to connect with receivers embedded in devices. Since it self-tunes, you can also move the device freely within a wide charging range,' explains Prasad Jayathurathnage, a post-doctoral researcher at Aalto University.

The team has achieved the effect through the design of the coils used in the transmitter. By winding the coils in a specific way, they create two kinds of electromagnetic fields: one going outwards and the other around. These fields couple the receiver and transmitter to achieve efficient power transfer.

Currently, the transmitter is highly efficient at 90 percent at up to 20 centimetres distance, but continues to work at longer distances, just with a lower efficiency of energy transfer. In principle, the peak-efficiency range could grow as the technology is refined. 'For now, the maximum range at peak efficiency is dependent on the size of the transmitter and receiver. With the right engineering, we could shrink them down, ' Jayathurathnage comments.

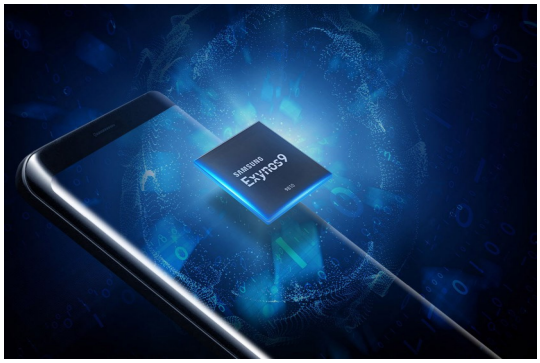
While the team has demonstrated proof of concept, safety tests are still needed to confirm that the electromagnetic field generated by the transmitter is not harmful to humans. It is, however, clear that the resulting electric field, which is known to be the main cause for potentially harmful effects, is minimum as the technology relies on magnetic fields.

Once deemed safe, bringing the technology to product would mean a little less hassle in a world increasingly dependent on smart devices.

-Mr.Prasad Kulkarni
(TE E&TC)

Samsung to make chips for mobile

South Korean technology multinational company Samsung is considering spending over 10 billion dollars to build an advanced chip-making plant in Austin, Texas, USA. This new plant might be capable of making processors with **3nm** advanced architecture.



This would be Samsung's third worldwide plant to use extreme ultraviolet lithography technology in its chip production.

The new US-based Samsung fabrication plant could provide the company with a strong foothold in getting new contracts from US customers amidst the ongoing trade tensions between the US and China. This move from Samsung would also bring it into closer competition with **TSMC**, which manufactures chips for **Apple**, among others, including the **5nm** processors found inside Apple's latest iPhones and Macs.

Samsung plans to invest one hundred sixteen billion dollars over the next decade into non-memory chips, which will be produced in Austin and are currently thought to be limited to lesser advanced 14 nm process nodes.

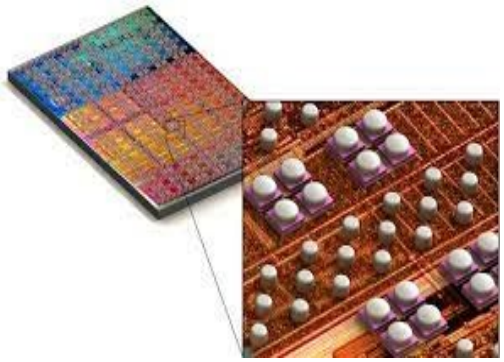
Samsung hopes to begin offering chips based on the newer 3nm processor node technology in 2022. While the South Korean giant's strength has traditionally been in memory chips, the market for logic devices like smartphones and computer processors is more profitable.

The company still faces a big challenge competing with TSMC, which plans to invest $28 billion this year alone.

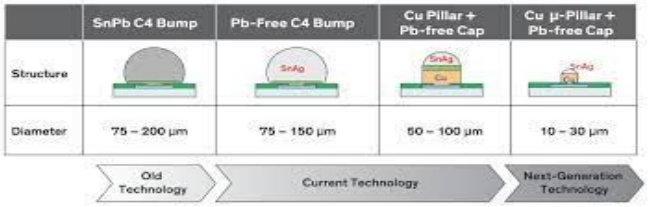
Dr.R.K Agrawal
HoD (E&TC Dept.)

Thermal Copper Pillar Bump

The thermal copper pillar bump is a micro-size thermoelectric device used for the packaging of electronics and optoelectronics, such as laser diodes, semiconductor optical amplifiers, CPU, and GPU



Nextreme Thermal Solutions developed this technology in order to integrate active thermal management functionality at the chip level. The method is now used by tech giants, including Intel and Amkor, to connect microprocessors and other advanced chips to various surfaces. When current passes through a circuit board, the thermal bump pulls the heat and transfers it to the other bump. This process is known as Peltier effect, and this is how a thermal bump helps in reducing heat from electronic circuits. It acts as solid-state heat pumps and adds thermal management functionality on the chip's surface. Today's thermal bumps are about 20 µm high and 238 µm wide (diameter).



The next generation technology would bring down the height of thermal bumps to 10 µm. A new opportunity exists to begin next-generation electronic product design by including chip and module-level thermal management directly into the packaging process. In the same manner that silicon shrinks have made electronic products ubiquitous in our daily lives, so will shrinking the physical scale of thermal management materials. Integrating thermoelectric materials into the interconnect structure for advanced packing processes, instead of as device add-ons, opens the door to chip-level thermal management.

Source:- Dr. Paul Magill, VP Marketing & Business Development

-Twari Lajima
(TE E&TC)

Cell Phone Operated Land Rover

Conventionally, wireless-controlled robots use RF circuits,which have the drawbacks of limited working range, limited frequency range and limited control. Use of a mobile phone for robotic control can overcome these limitations. It provides the advantages of robust control, working range as large as the coverage area of the service provider, no interference with other controllers and up to twelve controls.

Although the appearance and capabilities of robots vary vastly, all robots share the features of a mechanical, movable structure under some form of control. The control of robot involves three distinct phases: pre-ception, processing and action. Generally, the preceptors are sensors mounted on the robot, processing is done by the on-board microcontroller or processor, and the task (action) is performed using motors or with some other actuators.

Project overview

In this project, the robot is controlled by a mobile phone that makes a call to the mobile phone attached to the robot. In the course of a call, if any button is pressed, a tone corresponding to the button pressed is heard at the other end of the call. This tone is called 'dual-tone multiple-frequency' (DTMF) tone. The robot perceives this DTMF tone with the help of the phone stacked in the robot.

The received tone is processed by the ATmega16 microcontroller with the help of DTMF decoder MT8870. The decoder decodes the DTMF tone into its equivalent binary digit and this binary number is sent to the microcontroller. The microcontroller is pre-programmed to take a decision for any given input and outputs its decision to motor drivers in order to drive the motors for forward or backward motion or a turn.

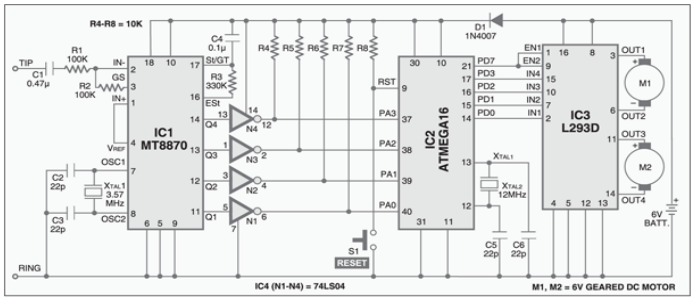


Fig. 2: Circuit diagram of microcontroller-based cellphone-operated land rover

The mobile that makes a call to the mobile phone stacked in the robot act as a remote. So this simple robotic project does not require the construction of receiver and transmitter units.

DTMF signaling is used for telephone signaling over the line in the voice-frequency band to the call switching centre. The version of DTMF used for telephone tone dialing is known as 'Touch-Tone.'

TABLE I
Tones and Assignments in a DTMF System

Frequencies	1209 Hz	1336 Hz	1477 Hz	1633 Hz
697 Hz	1	2	3	A
770 Hz	4	5	6	B
852 Hz	7	8	9	C
941 Hz	*	0	#	D

DTMF assigns a specific frequency (consisting of two separate tones) to each key so that it can easily be identified by the electronic circuit The signal generated by the DTMF encoder is a direct algebraic summation, in real time, of the amplitudes of two sine (cosine) waves of different frequencies, i.e., pressing '5' will send a tone made by adding 1336 Hz and 770 Hz to the other end of the line. The tones and assignments in a DTMF system are shown in Table I.

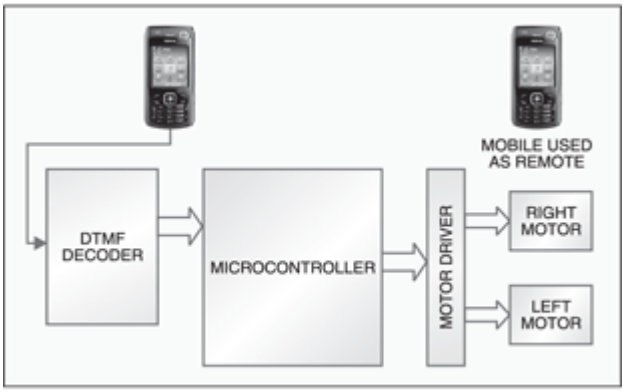


Fig. 1: Block diagram of cellphone-operated land rover

Source : electronicsforu.com

-Ms.Janavi Ahire
(SE E&TC)

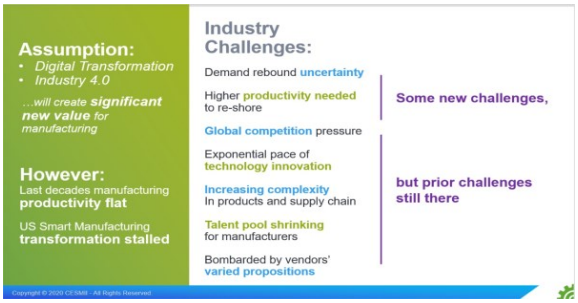
Production Technology Challenges

The challenges associated with meeting the needs of customers are now extending more deeply into the production process, as Jakob Dück explains

One of the most significant challenges when it comes to manufacturing technology is how to serve the wishes of your end consumers and those challenges are now increasingly extending into production technology.

Individualisation can't be achieved with the tool kits associated with conventional mass production, so there are growing calls for a completely different design of production processes, including machines and systems.

The individualisation of mass production is one of the core aspects of Industry 4.0, so the question is how should the processes for "individualised production" be shaped and designed so that the costs don't soar?



According to KUKA, a robot manufacturer, customisation requires a high degree of standardisation and automation, which at the same time affords the scope for variations in terms of customer-relevant product features. Modularisation, which provides customers specific, tailored product configurations based on a modular building block system, is seen as a cost effective way to meet individual customer needs.

When it comes to modularisation, interfaces are a vital component as the degree of automation rises and modularisation deepens, and they play an increasingly critical role as the link between the elements or modules - without interfaces the modules will never become a whole!

In some instances standardised interfaces and in others "individualised" interfaces will be more advantageous but in order for OEMs to determine the right degree of individualisation for their machines and to bring them into line with the different automation and modularisation requirements along the life cycle, it is necessary to think in terms of different "clusters" or functional groups.

-Ms. Pooja Sonawane
(TE E&TC)

Electronics Manufacturing Cluster

The district chapter of the Confederation of Indian Industry (CII) has put in place a task force to develop the electronics manufacturing sector in Coimbatore.

The task force has commenced discussions with large multinationals operating in the state and other places to attract investments and take up expansion projects in the district

Arjun Prakash, chairman, district chapter of CII, said while nurturing existing business, it was also important to explore emerging business opportunities and prepare a point of penetration. "Electronics is definitely an area for Coimbatore, especially in view of the new talent pool that has shaped up in the district in this decade. We have the potential to capture 30%-40% of the state's electronics manufacturing output, which is likely to be valued at $40 billion by 2025."

Other senior functionaries of CII said while the district was known for foundry, pumps, valves, textiles, jewellery and wet grinders, the share of electronics has not been so high. But the district has great potential in electronics, with its capabilities in precision engineering and manufacturing.

CII functionaries also urged the industry players to utilize this space, which could provide direct employment to more than 10,000 people and indirect employment to 40,000 to 60,000 people, while boosting the local consumer economy.

Pointing out that healthcare was becoming increasingly digital driven, Prashanth S, vice-chairman, district chapter of CII, said a homegrown electronics industry that focuses on digital health could capture a significant portion of the market

Industrialists said the CII was positioning the district as an important destination for channeling investments during meetings with state and central government authorities. "It aims to understand the challenges in electronics manufacturing and aid the growth of the industry by developing a road map," they said.

On its part, CII is hoping to work for an electronics cluster in the district.

Source: Economic Times

Prof.K.K Bamb
(E&TC Department)

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Magazine interview

Mr. Ganesh Nagare
Assistant Consultant in TCS

Q: Sir, Please Tell Us About Your Educational Journey.
A: Hello, I am Ganesh Nagare. I have done my schooling up to 10th in pune itself with, I passed out SSC from dhyandip school, Pune with 85% and after that I have taken admission in GPT for diploma. In GPT I had completed my 3years of.diploma again with good marks, I moved towards my degree college i.e snjb basically when I came in snjb , really I was not familiar with anything there, the teachers, friends and all ,but after days passed. I was fully gone mixed with the environment of snjb. I was then familiar with all teachers and friends too. I have learnt a lot in snjb in my 4 year of engineering indeed . I was the EESA president in my batch so I was too enthusiastic in degree period. With some what ups-downs and enjoyment too I have completed my degree from snjb.

Q: What is Your Family Background, When Your are Young, Did You Receive Support From Family?
A: Yes, I'm also belongs to a middle class family so like that. Family members were too supportive towards me. Because of them I am here whatever that's.

Q: Why You Decided to Choose this Field for Engineering?
A: I have done my diploma in Electronics and telecommunication so and so I have completed my degree from same filed itself.

Q: Which is the Most Difficult Situations You Faced in Your Journey and How You Tackled that Situations?

A: When I had completed my degree and searching my job that was the difficult situations for me. I have given my hardcopy of resume at so many industries there like ranjangaon MIDC and all and somewhere I have been selected also in electronic as domain. I was doing my job at one place for experience then I thought that this is not snuff for me I want to do more in my journey some what interesting so I left the job and I was perfect in programming so I have decided to join big company like TCS and then I have given the interview there and luckily, I have been placed there. yeah.... After working there alot right now I am ASSISTANT CONSULANT in TCS.I have tackled the difficult situations in calm way indeed

Q: Which Was Your Happiest Moment?

A: My happiest moment was when I have made my fixed position in TCS as ASSISTANT CONSULANT. And same way when my team get success in every work

Q: Who is Your Roll Model?

A:Indeed,My Mother and Father

Are my roll model self motivation is also important in life if you want to be a success full one.

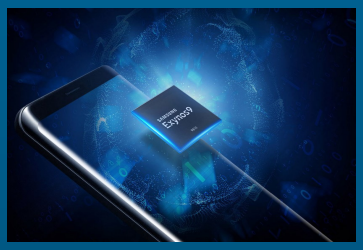
Q: What is Your Advice to the Young Engineers What We Need to Do to Get Success Like You?

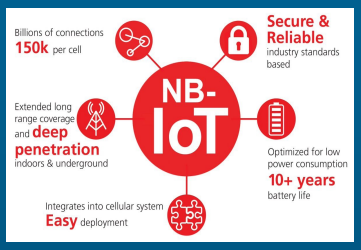
A: Yeah.... Its my suggestions to you all that if you want to become success full in life don't get hesitate while asking the questions to the teachers because first impression is the last impression and choose the filed which is suited for you. I have settled my self in IT sector so also choose the sector which suits you.

IN these way we have taken the interview of TCS ASSISTANT CONSULANT Mr Ganesh Nagare sir with great enthusiasm and he also replied in enthusiastic way

Thanks!

-Mr.Rishabh Kasawa
(BE E&TC)
-Ms.Komal Satpute
(TE E&TC)





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