

Arihant

सपना

Newsletter

A Touch of Excellence, Every Month

SEPTEMBER 2025



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Teachers' Day: The Eternal Lesson for Arihant Electricals



At Arihant Electricals, we believe that behind every success story lies the unseen guidance of a teacher. On this Teacher's Day, we bow to the eternal spirit of teaching that shapes not only individuals but also organisations like ours. A teacher imparts more than knowledge—he instills values, ethics and the courage to face challenges. In the same way, Arihant thrives because of the spirit of guidance, mentorship and learning that flows through every level of our organisation.

Every leader here becomes a teacher when they show the path ahead. Every colleague becomes a teacher when they share knowledge selflessly. Even failures and hardships act as silent teachers, reminding us to remain strong, humble and innovative. This bond of continuous learning is what makes Arihant not just a workplace, but a nurturing ground for growth and excellence.

By embracing the timeless ethics of teaching—patience, fairness, accountability, and compassion—we create a culture where work is not just about achieving targets but about evolving as better human beings. Arihant Electricals takes pride in being a family where each one learns from the other, carrying forward the true legacy of a teacher.

On this Teacher's Day, let us not only remember the gurus of our past but also cherish every mentor, colleague and experience within Arihant that silently lights our way.

“गुरुर्ब्रह्मागुरुर्विष्णुःगुरुर्देवोमहेश्वरः।
गुरुः साक्षात्परंब्रह्मतस्मैश्रीगुरवेनमः॥”



Featured Articles

Dive into this month's insightful articles, covering industry trends, innovations, and expert perspectives. Stay informed, stay inspired, and explore ideas that drive excellence at Arihant Electricals.

1 BMS (Battery Management System): Ensuring Safe and Efficient Battery Operation

A Battery Management System (BMS) is a system in charge of oversight and management of a battery or a battery pack. The BMS aims to protect the battery from operating outside its safe operating region.

It is responsible for monitoring, controlling, and protecting the electric vehicle batteries. It manages individual cells or modules within a battery pack, especially li-ion types.

Critical for safety, performance, and longevity in devices from system to electric vehicles.

Core functions of BMS

The term "battery" implies the entire pack; however, the monitoring and control functions are specifically applied to individual cells, or groups of cells called modules in the overall battery pack assembly. Lithium-ion rechargeable cells have the highest energy density and are the standard choice for battery packs for many consumer products, from laptops to electric vehicles.



Priyanka Patidar
(R&D Dept.)

Monitoring: Tracks voltage, current, temperature continuously.

Protection: Prevents operation outside safe area.

State Estimation: Calculates SoC, SoH, remaining life.

Optimization: Adjusts charging/discharging.

Communication: Reports battery status to external systems.

How Do Battery Management Systems Work?

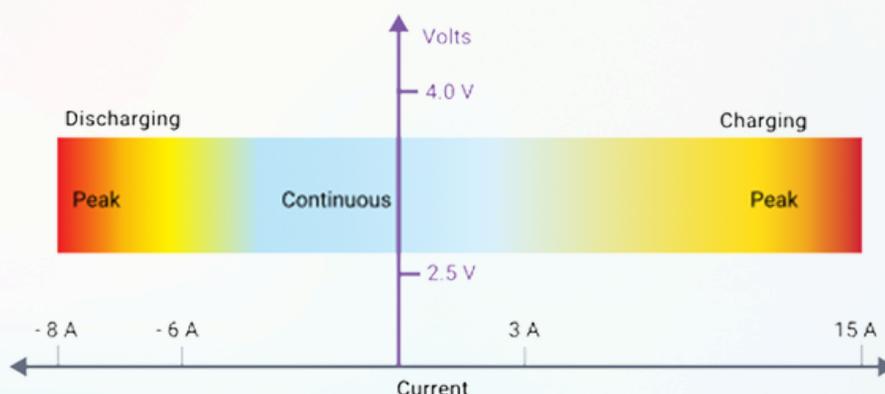
Battery pack protection management has two key arenas: electrical protection, which implies not allowing the battery to be damaged via usage outside its SOA, and thermal protection, which involves passive and/or active temperature control to maintain or bring the pack into its SOA.

a. Electrical Management Protection: Current

- BMS monitors continuous and peak charging/discharging currents.
- Allows short peak currents (e.g., EV acceleration) but prevents prolonged overload.
- Detects sudden current spikes (e.g., short circuits) and can interrupt current flow instantly.

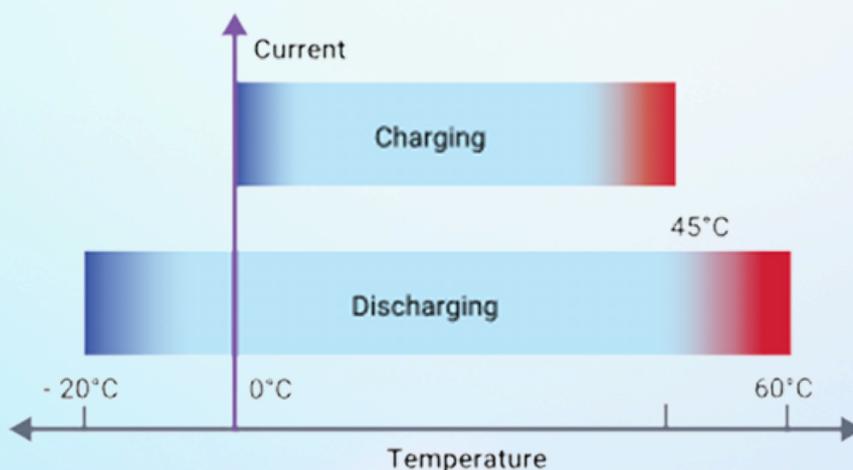
b. Electrical Management Protection: Voltage

- Maintains cell voltage within safe limits during charge and discharge cycles.
- Voltage limits vary with temperature and battery chemistry.
- Prevents overcharging and deep discharging, both harmful to battery health.



c. Thermal Management Protection: Temperature

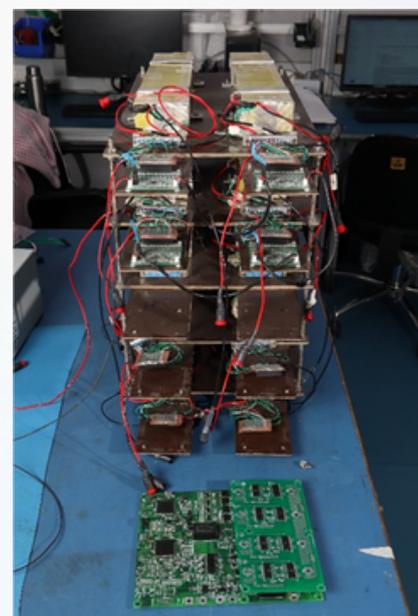
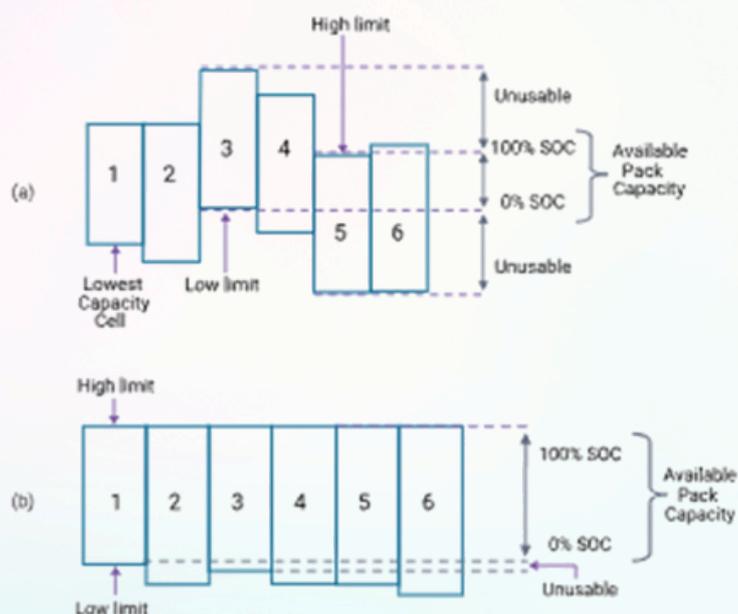
- BMS integrates passive (heat sinks) and active (cooling fans/liquid cooling) thermal controls.
- Maintains temperature within SOA to prevent thermal runaway or capacity loss.
- Thermal data is critical for adjusting charging rates and protecting cells.



d. Safe Operating Area (SOA) of Lithium-Ion Cells

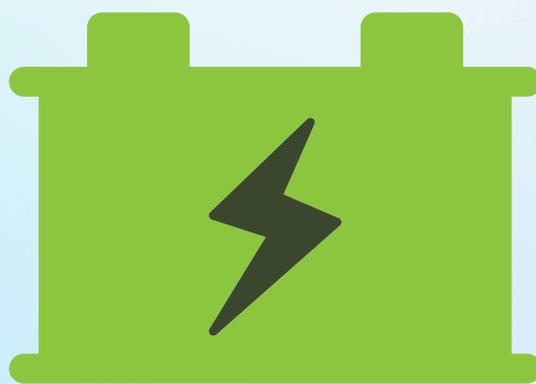
The state-of-charge (SOC) of a cell or module at a given time is proportional to the charge available relative to the total charge when fully charged. Thus, a battery that resides at 50% SOC implies it is 50% charged, which is akin to a fuel gauge figure of merit. BMS capacity management is all about balancing the variation of the SOC across each stack in the pack assembly. Since the SOC is not a directly measurable quantity, it can be estimated by various techniques, and the balancing scheme itself generally falls into two main categories, passive and active.

- Lithium-ion cells have strict voltage and current limits for safe operation.
- SOA boundaries depend on cell chemistry and temperature.
- Operating outside SOA risks performance degradation or dangerous failures.



The Importance of Battery Management Systems

Complexity varies by battery size, application, and safety requirements. Must comply with regulatory certifications to avoid penalties. Balances cost, size, and feature set for consumer electronics vs. automotive uses. Integrates multidisciplinary technologies: electrical, digital control, thermal, and sometimes hydraulic.



2 SMART VACUUM CLEANER ROBOT: When Technology Becomes a Household Companion

Introduction

In today's busy world, keeping our homes clean often feels like one more task on an already long to-do list. While traditional vacuum cleaners make the job easier, they still need our time and effort. This is where the idea of a Smart Vacuum Cleaner Robot comes in—a simple, affordable device designed to take over the repetitive work of cleaning. Built with basic sensors and a small control system, the robot can move around on its own, avoid obstacles, and collect dust. More than just a gadget, it shows how technology is quietly becoming a helping hand in our daily lives, giving us more freedom to focus on the things that truly matter.



SHIVAM GUPTA
(R&D Dept.)

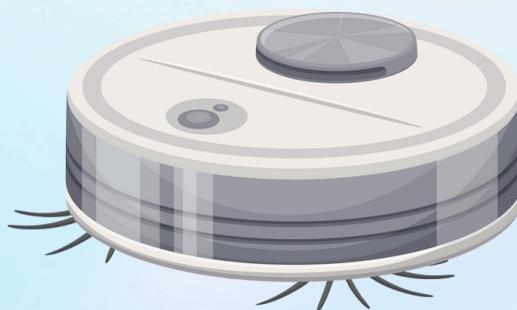
Technical Foundation

Core Components:

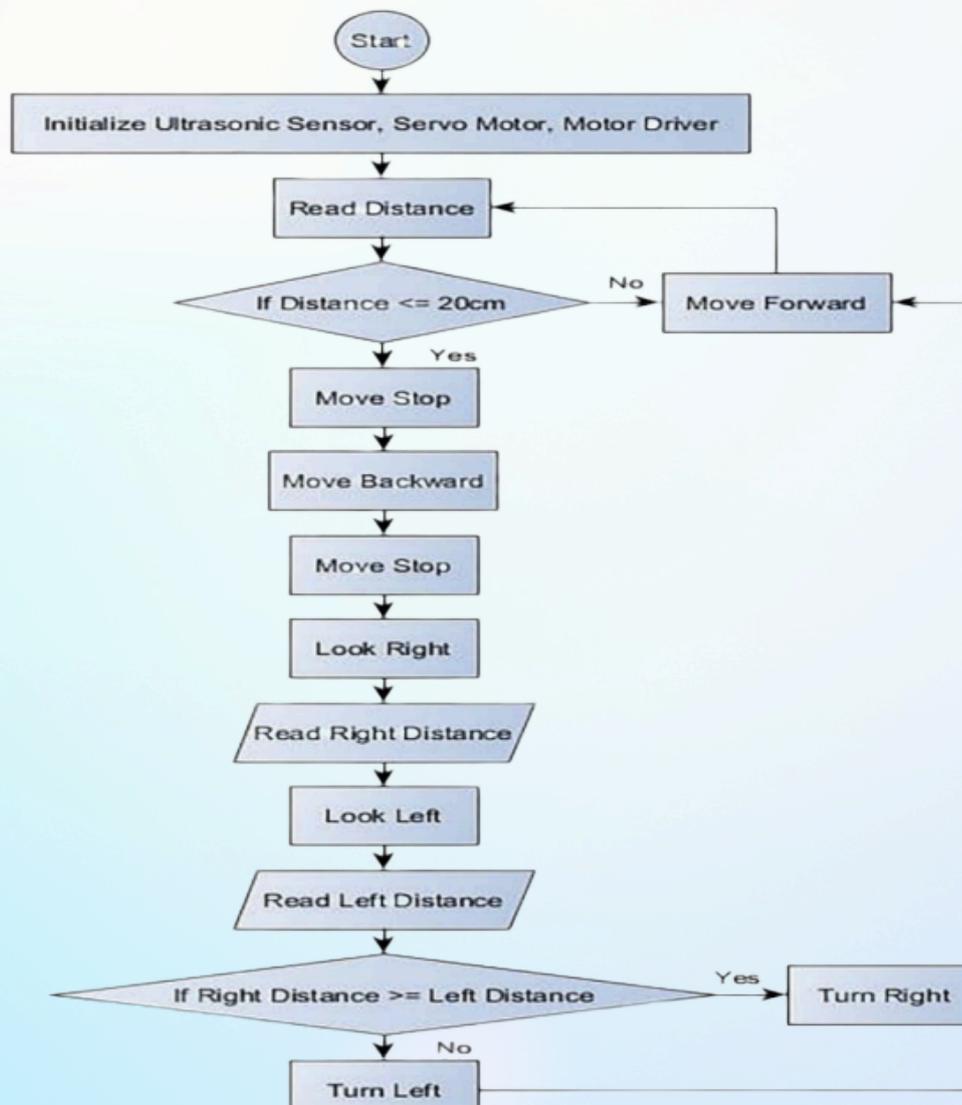
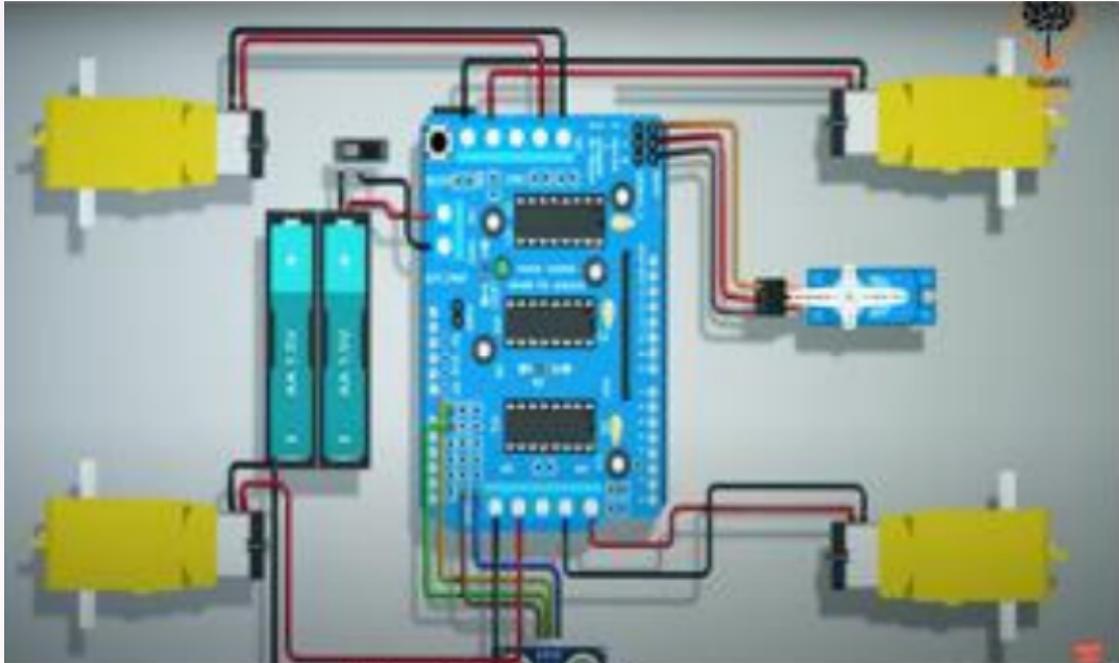
- Arduino Uno – the “brain” of the robot, programmed with movement and cleaning logic.
- Ultrasonic Sensor – detects obstacles and prevents collisions.
- Motor Shield (L293D) – drives DC motors for movement.
- Geared Wheels + Servo Motor – provide locomotion and turning ability.
- 6V Fan Motor – generates suction for dust collection.
- Lithium-Ion Battery – lightweight power source.
- Bluetooth Module (optional) – allows remote control via smartphone.

Social Relevance

Unlike expensive international models such as Roomba, this robot is designed to suit Indian homes affordable, adaptable, and practical for tiled floors. Beyond household use, it holds value in healthcare by keeping hospital floors sterile, in disaster recovery by clearing unsafe areas, in commercial spaces like malls and hotels where cleanliness builds trust, and even in industries for tasks like cleaning solar panels and warehouses. In essence, this small device reflects larger social values—health, safety, dignity of labor, and everyday convenience.



Working



Future Scope

The project is not the end but the beginning of possibilities. Future models can integrate:

- AI & Machine Learning: for personalized cleaning routines and intelligent mapping.
- IoT & Smart Home Integration: voice-controlled cleaning and mobile monitoring.
- Green Energy: solar-powered versions for outdoor and industrial cleaning.
- Affordable Scaling: mass production for rural and middle-class households.

In short, the robot of tomorrow won't just clean floors it will become a partner in healthy, sustainable living.

Conclusion

This project proves that technology can simplify daily life. The Smart Vacuum Cleaner Robot is not just about dust—it's about saving time, reducing effort, and showing how affordable innovation can quietly improve the way we live.



3 "निंदा : ऑफिस का मीठा ज़हर"

ऑफिस की एक अलिखित परंपरा है —

"काम से ज़्यादा चर्चा, और चर्चा से भी ज़्यादा निंदा।"

लगता है जैसे निंदा, काम से ब्रेक का कोई **चटपटा मसाला** हो।
शुरुआत में इसका स्वाद जितना लुभावना और Tasty लगता है,
बाद में उतना ही मन को कड़वा बना देता है।

कुछ लोगों के लिए निंदा —

एक प्रकार का **मानसिक व्यायाम** जैसी है।

यदि एक दिन यह **रस्म** न निभाई जाए तो, कुछ अधूरा-सा लगता है।

कई बार तो ऑफिस की चाय हो या बाहर की गप्पें,

निंदा का पिटारा खुलते ही सब उसी धारा में बह निकलते हैं।

कभी यह अपनी भड़ास (pressure release)

निकालने का ज़रिया होती है,

तो कभी सिर्फ **निंदा का रसास्वादन**।

पर यहीं से शुरू होता है, एक **मीठे ज़हर** का असर,

यह सुनने में **आनंददायक** सही, मगर भीतर तक **घातक** होता है।

यह रस, एक Sweet Poison जैसा है —

जो भीतर से हमारी **मानसिकता** को कुंठित कर **निराशावादी** बना देता है,

यह हमारे **बौद्धिक स्तर** को कमजोर करता है

और हमारे **व्यक्तित्व** की **आभा** को **धूमिल** कर देता है।

इतना ही नहीं —

यह हमारे कर्मों में भी जुड़ता है,

जो भविष्य में हमारी ऊर्जा और अनुभवों को दिशा देता है।

कई बार हम किसी कार्य की सफलता के लिए

जाप करते हैं, **प्रार्थना** करते हैं, आशा रखते हैं कि **शुभ फल** मिलेगा।

परंतु जब हम बार-बार किसी की निंदा करते हैं,

तो वह भी एक जाप बन जाता है — **नकारात्मक ऊर्जा का जाप**।

जिस तरह जाप मन में **भाव** भरता है,

ठीक वैसे ही निंदा का जाप हमारे भीतर **विकार** भरता है।



Pramod Jain
(Sales)



शब्द बार-बार दोहराए जाएं तो वे **संकल्प** बन जाते हैं,
और संकल्प ही **जीवन की दिशा** तय करते हैं।

जाप का **स्वभाव** ही होता है **सिद्ध** होना।

जैसे सच्चे मन से किया गया **नामस्मरण** मन को शुद्ध करता है,
वैसे ही बार-बार की गई निंदा से मन **मलिन** होता है,
और जीवन में **कुंठा, असंतोष और गिरावट** का प्रवेश होता है।

हर बार जब हम निंदा करते हैं, हमारे शब्द केवल हवा में नहीं उड़ते,
वे हमारे भीतर एक **नकारात्मक प्रतिध्वनि** को मजबूत करते हैं —
जो हमारे **व्यवहार, दृष्टिकोण और भविष्य** को आकार देती है।

जिस तरह जाप हमें **आध्यात्मिक ऊर्जा** देता है,
उसी प्रकार निंदा-जाप हमें **मानसिक विष** से भर देता है।
और फिर —

हम अनजाने में उन अनुभवों को **आमंत्रित** कर लेते हैं,
जिनसे हम बचना चाहते थे।

इसके अलावा,
निंदा में लिप्त रहने से हम स्वयं को भी **जोखिम** में डालते हैं —
क्या मालूम, जो आज दूसरों की "निंदा" में आपका साथ दे रहा है,
वही कल आपकी ही **चुगली** कर दे?

और तब न केवल **शर्मिंदगी** उठानी पड़ सकती है,
बल्कि **संबंधों और छवि** को भी **नुकसान** हो सकता है।

"निंदा का रस पीने से अच्छा है,
समता का जल पिया जाए,
यह मन को ठंडक देता है और आत्मा को निर्मल करता है।"

तो अब बताएं,
क्या अगले ब्रेक में निंदा के इस मीठे ज़हर का स्वाद लेंगे?



HIGHLIGHTS FROM EVENTS AND CONFERENCES

1. Arihant Electricals at the 9th Annual Drone & Police Tech Conference: Shaping India's Security Landscape

Arihant Electricals participated in the 9th Annual Drone International Expo and Police Technology Conference at Bharat Mandapam, where policymakers, technologists, and law enforcement leaders came together to shape the future of internal security. The sessions highlighted the growing role of advanced surveillance, smart policing, AI-driven analytics, and defence-grade communication systems in building resilient and secure cities. With a commitment to innovation and dependable solutions, Arihant continues to contribute towards strengthening India's evolving security infrastructure.



2. Arihant Elsys at Automation Expo 2025: Redefining Industrial Control

Arihant Elsys Pvt. Ltd. showcased its latest automation and safety solutions at Automation Expo 2025, highlighting technologies that pave the way for the next era of industrial control. From intelligent safety systems to integrated automation frameworks, our solutions are designed to enable industries to operate with greater efficiency, reliability, and safety. With innovation at the core, Arihant Elsys continues to support the transformation towards smarter and future-ready industrial ecosystems.





PEOPLE & CULTURE

At Arihant Electricals, our people are our greatest strength. This month, we celebrated birthdays, welcomed new team members, and fostered a positive workplace culture. Through these moments, we continue to build a collaborative and engaging work environment where everyone thrives!

August Birthday Celebrations

Celebrating our incredible team members and wishing them joy, success, and prosperity!



Birthday celebration of
Mr. Naveen & Anuj Gautam



Birthday celebration of Vivek Anand



Birthday celebration of Mr. Anoj Kumar





PEOPLE & CULTURE

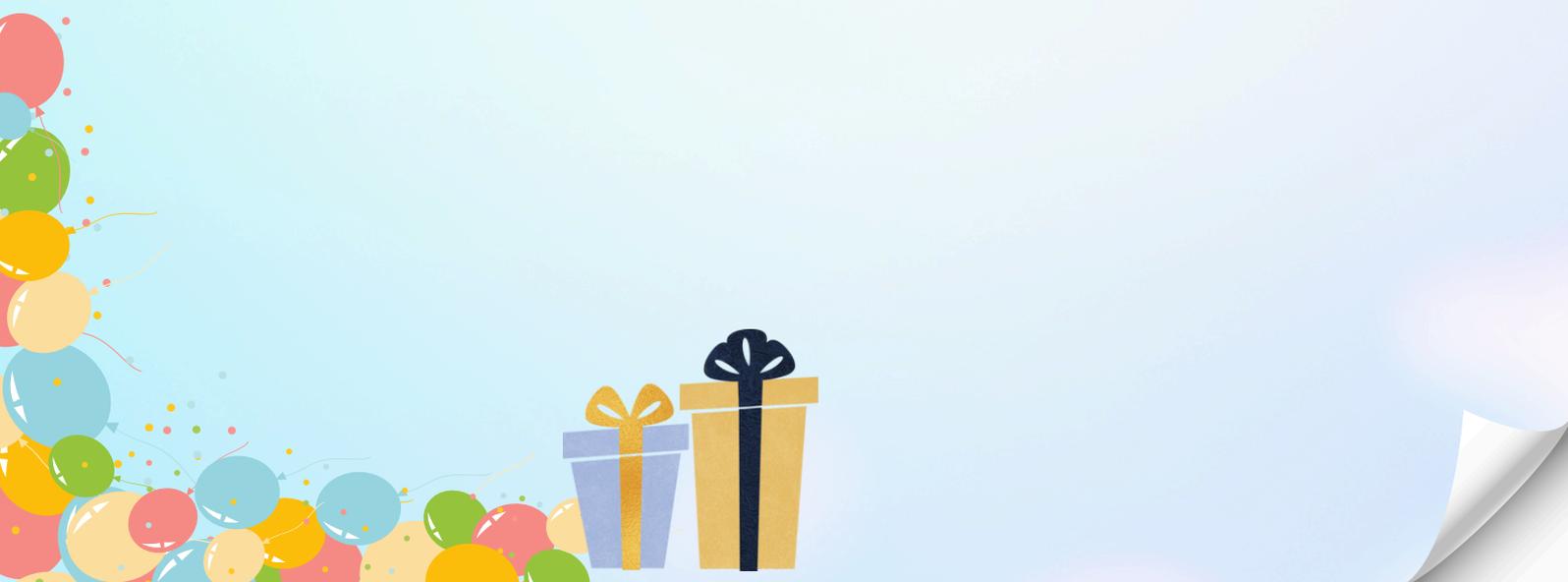
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Upcoming September Birthdays



Wishing you joy, success, and a fantastic year ahead!

Ravinder Singh	September 2
S. Aswasthama Reddy	September 7
Praveen Kumar Verma	September 8
Ganesh Yadav	September 16
Sudhakar Sharma	September 16
Ashish Rana	September 23
Priyanka Patidar	September 26
Somitra Gopalkrishna Telang	September 27
Nishant Kumar (R&D)	September 30





Welcome Aboard! (New Joinees - July 2025)



Excited to have new talents join the Arihant family as we grow together!

Rahul Agrawal	August 1, 2025	Asst. Manager Prod.
Rajendra Jharia	August 20, 2025	Sr. Engineer Procurement



“

We get brilliant results from average people managing brilliant processes.

Our competitors get average results from brilliant people managing broken processes.

-Toyota Philosophy

”

ENGINEER'S DAY OUT



An electrical engineer walks into a café and asks,
"Can I get a coffee... strong enough to power me through Monday?"

The barista replies,
"Sir, we serve coffee, not a UPS!"

The engineer laughs:
"Exactly! That's why I need coffee.
My UPS gives backup for a few
hours...

But my deadlines need backup for
a lifetime!"

Everyone in the café chuckled—
because whether it's electricity or
energy,

we all need the right source to
keep us running!



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