International Society of Automation
Delhi Section

ISA (D) NEWSLETTER

YEAR 2023-2024, IssUE NO.4

IN THIS ISSUE

From the desk of President …

I am glad to present before the members, the Year 2023-2024, Issue-IV of this Newsletter of ISA Delhi Section after a grand success of Fourth Technical event in this year, "Petroleum and Power Automation Meet, 2024", Two-day Conference and Exhibition at Hotel Eros, Nehru Place, New Delhi on 26th and 27th April, 2024.

Our various leaders of ISA (D) executive committee team had worked very hard to bring before you such big events. It had been our continuous endeavor to provide value to our members.

I once again thank all the dignitaries, participants, executive committee members and all others who supported ISA Delhi to make this event a grand success.

On behalf of executive committee, I would like to thank all sponsors, exhibitors, speakers and also compliment them for sharing their valuable technical knowhow with all our participants from various Industries.

I certainly hope that with the support of our active members, all our upcoming events, will also be a grand success.

I would like to compliment the Newsletter team for their sincere efforts in bringing this issue IV of ISA-Newsletter for the members.

M.K. SRIVASTAVA
(Hon President - ISA Delhi Section)

From the desk of Secretary …

It is with great pleasure that We present to you the latest edition of our ISA Delhi Section Newsletter, covering the highlights and successes of the January-March 2024. Following the resounding success of our recent flagship event, the "Petroleum and Power Automation Meet, 2024," held on the 26th and 27th of April at Hotel Eros, Nehru Place, New Delhi, I am thrilled to share the achievements and endeavors of our vibrant ISA community.

The success of such a significant event is a testament to the unwavering dedication and tireless efforts of our esteemed leaders. Their commitment to excellence has consistently been aimed at delivering value to our esteemed members, and this event stands as a shining example of that commitment.

I extend my heartfelt gratitude to all the dignitaries, participants, executive committee members, and every individual who contributed to the remarkable success of the "Petroleum and Power Automation Meet, 2024." Your support and enthusiasm have been instrumental in making this event a grand success.

I also extend my sincere appreciation to our sponsors, exhibitors, and speakers for their invaluable contributions and for sharing their expertise with our diverse audience from various industries. Your participation has enriched the learning experience for all involved.

Looking ahead, I am confident that with the continued support and active engagement of our members, our forthcoming events will also achieve new heights of success. Together, we will continue to uphold the standards of excellence that define ISA Delhi Section.

I would like to express my gratitude to the Newsletter team for their dedicated efforts in compiling and presenting this Issue-IV of the ISA Newsletter. Their commitment to keeping our members informed is truly commendable.

As we march forward, let us remain united in our pursuit of knowledge, innovation, and excellence, striving to make meaningful contributions to the field of automation and beyond.

Warm regards,

Sachin K Agrawal
Hon. Secretary, ISA - Delhi

GLIMPSES OF PETROLEUM & POWER AUTOMATION MEET 2024 - COLLABORATIVE AUTOMATION FOR ENERGY TRANSFORMATION

A Mega Technical event, "Petroleum and Power Automation Meet-2024 "two days Conference and Exhibition on Petroleum and Natural Gas Industries and Power Industries domain was organized by ISA- Delhi Section in "Hotel EROS", Nehru Place, New Delhi on 26th and 27th April, 2024, under the theme "COLLABORATIVE AUTOMATION for ENERGY TRANSFORMATION. The event was graced by various dignitaries from both Petroleum and Power sectors, ISA members and esteemed guests from various industries.

The Two-Day conference cum Exhibition started with welcome greeting of our esteemed dignitaries and lighting of lamps. Shri M. K. Srivastava, President, ISA-Delhi in his welcome address thanked all the dignitaries for being part of this event and sparing their precious time from their busy schedule. He also thanked all senior advisors, paper presenters, High Power Technical Committee members, sponsors, participants, exhibitors and all others who supported making this mega event a happening from beginning. He further went on to emphasize the importance of bringing all stakeholders of power sector in adopting the latest instrumentation and automation standards to achieve the goal of sustainable development.

This was followed by the address of Guest of Honours and Release of e-Souvenir for the event. Note of Gratitude was accorded by Shri. Sanjeev Sharma, Convenor of PPAM-2024.

The formal vote of thanks to all dignitaries and participants for gracing this occasion and knowledge sharing platform was accorded.

Later Exhibition was inaugurated by chief guest.

Post Tea session, Panel Discussion Session on most buzzing topic of automation sectors, "Future Landscape of Collaborative Industrial Automation Excellence" was organized and it received over whelming response from the audience over there. The CEO Conclave enlightened the audience with numerous developments and opportunities by the breadth and depth of the knowledge shared by CEO's. The session was moderated by Shri S. Mahesh Kumar.

Post CEO conclave, Paper Presentation session was started and on day 2, Paper Presentation from various Oil and Gas, Power sector, vendors made the day most Knowledge sharing day. Quizzes were conducted by Shri. Manish Kumar, post each session and overwhelming responses were received from audience. A panel discussion on Make in India – Opportunities, Expectations and Challenges for Instruments, Valves and Systems manufacturing Industry was conducted and from various organization participated and moderated by Shri. Rajiv Gupta. A great Appreciation was received by the Moderator for making such a wonderful thought-provoking event of the day.

ISA Delhi Section acknowledged the active participation of all veterans from industries for being the Chairperson and Co-Chairperson for various technical sessions by presenting a token of appreciation.

ISA Delhi Section also arranged lucky draw for all the esteemed audience, delegates who visited the exhibition and stalls in PPAM-2024, winner was presented with prizes.

Release of e-Souvenir by Dignitaries

Inauguration of Exhibition by Guest of Honour

Glimpses of the event - Enthusiastic Audience enjoying the event

Exhibitor Stalls

The Team behind the Mega event

Efforts of all the participants, sponsors, exhibitors, speakers were rewarded with token memento by ISA – D. ISA Delhi Section acknowledged the active participation of all experts from industries for various panel discussions. This mega event concluded with a vote of thanks by Shri. Sachin Kumar Agrawal, to all esteemed guests and members and heartfelt memorable moments.

ANNUAL GENERAL BODY MEETING - 2024

After one glorious year, April'2023 to March'2024 with happenings of Technical mega events, Technical Meets and Leadership Meet, ISA Delhi Section executive body elected new ISA-D Executive Committee members for the year 2024-2025, mixed with some experienced veteran and some new leaders in Annual General Body Meeting held on 27th April 2024, at "Hotel EROS", Nehru Place, New Delhi.

AGM started with a welcome address to the members and their family by Shri. Sachin Agarwal, Secretary, ISA Delhi. He called the meeting to order and requested Shri M K Srivastava, President, ISA-Delhi section, to take over the proceeding of meetings.

Shri M K Srivastava, President, ISA-Delhi thanked all the members of ISA Delhi Section for their support and immense efforts in making ISA-Delhi progressive and achieving the entire milestone for the year 2023-2024 successfully. While addressing the gathering, he highlighted the achievements of ISA-Delhi Section in the year 2023-2024, about all the events, technical meets and how the same have been useful to Automation fraternity in enhancing their knowledge, skills and utilizing the same in their field.

Shri. Sumit Haldar, Presiding Officer, officially announced the newly elected ISA Delhi team for 2024-2025 as

Shri Sanjeev Sharma – President
Shri Some Nath Kundu – Secretary
Shri Anil Chaudhary- Treasurer

Outgoing and Incoming President, Secretary, Treasurer and Presiding Officer at AGM

ISA Delhi Family members at AGM

MONTHLY MEETS

LAUNCH OF SITRANS TDL - 15TH MARCH, 2024

ISA-D Monthly Meet was conducted at Mirza Ghalib Chamber, Scope Convention Centre, on 15th March, 2024, on the topic " SITRANS TDL (In situ Continuous Process Gas analyser) & Introduction of new range of Measurement Intelligence products by M/s Siemens Limited.

Various insights were shared by the esteemed speaker(s) Mr Sandeep Vaidya, and Mr Manoj Singh. Appreciation Memento was presented to the presenters. Monthly Meet was followed by Networking Dinner.

SMART ENGINEERING & EFFICIENT SOLUTIONS FOR WATER - 23RD FEB, 2024

ISA-D Monthly Meet was conducted at Mirza Ghalib Chamber, Scope Convention Centre, on 23rd February 2024, on the topic " Smart Engineering & Efficient solutions for water industry by M/s Rittal Limited.

Various insights were shared by the esteemed speaker Mr Abhinav Gurkhoo. Appreciation Memento was presented to the presenters. Monthly Meet was followed by Networking Dinner.

ISA DELHI STUDENT CHAPTER EVENTS

Bharti Vidya Peeth - Seminar on Industrial Automation

On 16th February, 2024, at Bharti Vidyapeeth, a workshop was organized to offer an immersive experience into the world of industrial automation, showcasing the latest trends, technologies, and methodologies being adopted in the industry. Aditya Singh shared his expertise and insights on various aspects of robotics and automation, drawing from his extensive experience at Adverb Technology. The session was attended by 25 participants and covered a broad range of topics, including the principles of robotic operations, the integration of automated systems in manufacturing, and the importance of IoT (Internet of Things) in enhancing operational efficiency.

Workshop on LFR

The Arduino-Based 3-Wheel Robot Workshop held on 2nd March, 2024, as part of the Line Follower Robot (LFR) initiative saw 18 participants successfully construct four functional robots. Guided by experienced instructors, attendees learned Arduino programming and robotics fundamentals. The workshop emphasized hands-on learning, covering circuit assembly, programming, and sensor integration. Using Arduino, participants coded their robots to autonomously follow predefined paths. Through practical exercises, they gained valuable skills in motor control and problem-solving. The culmination of the workshop showcased the participants' technical proficiency and creativity, with each robot successfully demonstrating autonomous navigation. The event underscored the efficacy of experiential learning in robotics education, providing participants with practical skills and knowledge for future exploration and innovation in the field.

Pyhunt

On 6th March, 2024, the PyHUNT coding competition, held at ISABVCOE as part of BVEST 24 and co-organized by GeeksforGeeks (GFG), featured two challenging rounds. The first round, a qualifying stage, comprised a comprehensive MCQ quiz testing participants' theoretical knowledge, including debugging, output prediction, and code jumbling. From 174 registrations (74 teams), only the top 10 participants advanced. The second round, "Tech Bingo," required participants to match descriptions of various technologies with their corresponding names on bingo cards, blending knowledge with quick thinking and strategy. With a winners' prize pool of Rs 2500, the top 3 teams were duly awarded, highlighting their exceptional performance and dedication to mastering programming and technology.

Agnipath

Agni-Path, the ultimate robotics challenge, unfolded on 8th March 2024, welcoming 36 registered participants comprising 13 teams. The event promised an adrenaline-pumping showcase of innovation and skill, where autonomous robots competed in a thrilling race, navigating obstacles with precision and agility. The competition exemplified the convergence of technology and strategy, demanding calculated moves as teams vied to conquer the course in the shortest time possible. Each team's robot epitomized engineering prowess, designed to navigate complex terrains autonomously, showcasing the future of robotics. Participants demonstrated remarkable ingenuity and problem-solving skills as they maneuvered their robots through challenging obstacles, embodying the spirit of innovation. Spectators were treated to a captivating spectacle, witnessing the seamless fusion of technology and strategy in action. The Agni-Path competition was not merely a race but a testament to the boundless possibilities of robotics. It highlighted the transformative potential of autonomous systems, paving the way for advancements in various fields. As the event concluded, participants left with invaluable experiences and insights, embodying the ethos of Agni-Path: Racing into the Future, One Bot at a Time!

ISA DELHI WELCOMES OUR NEWEST MEMBERS

It is with great pleasure that we extend a warm welcome to the newest members of our ISA Delhi Section. Your presence enriches our association, and we are excited to see the unique perspectives and contributions you will bring to our Section.

To help you get started and make the most of your membership, here are a few tips:

1. **Explore Our Resources:** Take some time to browse through ISA Delhi website and familiarize yourself with the various resources available.

2. **Connect with Fellow Members:** Join ISA Connect where you connect with fellow members, engage in discussions, and forge new professional relationships.

3. **Attend Events and Meetings:** Keep an eye on our upcoming events and meetings. These are excellent opportunities to network, learn, and collaborate with other members who share your interests.

4. **Reach Out for Support:** Don't hesitate to contact our ISA Delhi members if you have any questions, need assistance, or have suggestions to share.

Once again, a heartfelt welcome to each of you. We are eager to witness the positive impact you'll make within our association. Together, we can achieve extraordinary things!

New Members for the period Jan to March, 2024

1	Mr. Anil Sehgal
2	Mr. Sanjay Bhatia
3	Mr. Vinod Kumar Yadav
4	Mr. Rajesh Sinha
5	Mr. Jasbir Singh Khurana
6	Mr. Tajinder Gupta
7	Mr. Rajesh Porwal
8	Mr. Vibhor Jain
9	Mr. Dipanjan Banerjee
10	Mr. Kapil Khurana
11	Mr. Gurpreet Singh Sehgal

RELAY CONTACT MATERIAL – DOES IT REALLY MATTER

- DR. ASHISH MANCHANDA

It is common for Automation & Control System users to take RELAY as a standard product and with it, a standard relay CONTACT MATERIAL. Often, they're perfectly happy – no problems in replacing relays after a few years – and don't give alternative contact materials a second thought. In Industrial Applications, however, where Service Life of Plant Control Systems and Machinery is dependent on the MTTF/Electrical Life of a relay, selecting the right contact materials becomes an important parameter so that your relay is not to be used as a consumable component, which is replaced after every few years.

RELAY LOAD SWITCHING

Switching loads of up to 50 A is generally possible with industrial relays, whilst higher currents are usually the province of contactors. The principal contact materials used for relays with nominal contact ratings within the range 5 to 50 A are most commonly, Silver Nickel, Silver Cadmium Oxide and Silver Tin Oxide.

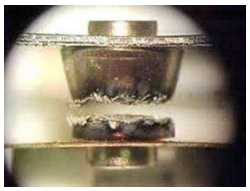
Silver Nickel (AgNi) has been around for "almost ever". The relatively small nickel content (10%) is primarily to mechanically harden the silver and increase the resistance to electrical erosion of the contact faces, therefore making it that much more robust under heavier electrical load. It is ideal for resistive loads at the full nominal current rating of the contact, and for other loads where the load current is not so high. It is an economical and good-performing general-purpose material and quite often the standard material for many power relays.

Silver Cadmium Oxide (AgCdO) has been popular for perhaps 50 years, particularly for its very good performance when switching inductive and motor loads. Contact material erosion is lessened and in particular, the material has an improved resistance to contact welding under conditions of short-term high peak inrush currents that result from switching large contactor coils, incandescent lamps and small motors.

Its use has for some time been limited by the "RoHS" European Directive 2002/95/EC. In its first edition, Cadmium was prohibited completely, but a further revision allowed its use in electrical contacts. The so-called "RoHS II" 2011/65/EU still permits this but establishes a deadline (unless any further revision in the next months) for general use until the end of July 2025.

Silver Tin Oxide (AgSnO2) is a more recent innovation, and like Silver Cadmium Oxide (AgCdO) is produced by a powder/sintering process – unlike Silver Nickel which is a true alloy. The incredibly fine grinding of Tin Oxide into sub-micron particles, the even dispersion of this within the powdered silver, and the final high pressure forming to make the contact is a procedure that requires the most meticulous process control. In the early days of Silver Tin Oxide, the quality control, and therefore the performance, of these sintered materials was not always as consistent as it needed to be. However, today the high performance of Silver Tin Oxide can be relied on, and

nowhere more so than in the handling of large peak inrush currents primarily caused by power factor correction capacitors associated with fluorescent and other gas discharge lamps, and also the input circuitry associated with modern energy-saving lamps, CFL or LED.



The fundamental problem with switching capacitive loads is that there is virtually no intentional current limiting in the circuit. Instantaneous currents are therefore limited only by source and line impedance and will be in the order of several hundred, if not a few thousand amperes. Similar peak currents occur when powering up switch mode power supplies and variable speed inverter drives. Not surprisingly, contact welding has historically been a big problem in these applications, but with careful evaluation of the application against the known performance of the relay under such conditions, it is often possible to predict the likely improvement that a change to Silver Tin Oxide will bring.

Gold Plating for Low Power/DI Load - At the other end of the current scale, we are not concerned with contacts eroding, or them welding together – we are concerned that contacts make a reliable and low-resistance connection.

What do we mean by low-level switching? Typically, a 6A control relay has a specified minimum switching load of 10 V / 10 mA, which for a relay specifically designed to switch loads up to 1 kW, is not bad. The specification means that all three minimum values should be met.

Broadly speaking one should avoid using relays with power contact materials, as the characteristics that made them good power switchers, tend to work against reliable low-level switching. But occasionally there arises the need to switch both power and low-level circuits; then
the only realistic option would be to select a power relay with the apparent anomaly of having gold-plated contacts. “Anomaly” since it makes little sense to gold plate power contacts, as gold is expensive and would simply be burnt off under power-switching conditions. “Apparent” because we know that there will be the odd occasion when this solves a mixed switching application with reliability at both ends of the scale. There is, however, a very important aspect to this. The gold must be hard plated to a significant thickness of at-least 6 micron– avoiding any suggestion of using a gold flash that is typically of the order of 0.2 microns. which allows only protection in storing, but no better performance in use.

This is not just because such a thin coating will mechanically wear through within a few thousand operations; so do not be mistaken into thinking that because the relay only operates in your application once a month all will be well – it won’t! For reliable low-level switching a gold plate will be excellent, but a gold flash is likely to be worse than bare silver!

For any Automation Control System - The correct Relay contact material is like the correct tyres for a race car, Rally tyres on a F1 Car are not so good. The same is for relays, the wrong contact material will have a big effect on its overall performance of the plant and machinery.

Appeal from ISA Delhi Section

All members, sponsors, technical experts are invited to contribute in making this quarterly newsletter more informative by sharing their technical expertise in the form of technical literature on latest Technology for the next quarter newsletter.

Ask the Editor

For Technical queries to be answered by experts and/or any suggestions for improvement, Please contact our editorial board comprising:-

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