

Event Report

Online Lecture Programme on “A Comprehensive Study on the Weldability Characteristics of 904L Stainless Steel for Heat Exchanger Applications” Organized by IEI Tiruchirappalli Local Centre & The Indian Institute of Welding, Tiruchirappalli Branch

In Association with: SQF (IEI, New Delhi), CSI, IIM, IIIE, IIPE, ISNT, IWS, and Kumari Ariviyal Peravai

Date: 29th April 2025 | Mode: Zoom (Online)

Introduction

On **29th April 2025**, the IEI Tiruchirappalli Local Centre, in collaboration with **The Indian Institute of Welding, Tiruchirappalli Branch** and several professional bodies, organized an online lecture programme on the topic **“A Comprehensive Study on the Weldability Characteristics of 904L Stainless Steel for Heat Exchanger Applications.”** The programme was conducted at **6:00 pm via Zoom App** and was attended by students, researchers, faculty members, and industry professionals.

Resource Person

The lecture was delivered by **Mr. Binayak Behera, Assistant General Manager, Isgec Heavy Engineering Ltd., Yamunanagar, Haryana.**

Mr. Behera, with his extensive industry experience in heavy engineering and welding technology, provided an in-depth discussion on the challenges and solutions related to the weldability of **904L stainless steel**, a high-performance alloy widely used in **heat exchanger applications**.

Programme Highlights

The session began with an introduction to the **properties and applications of 904L stainless steel**, known for its **high corrosion resistance, toughness, and suitability for harsh environments**. The lecture then covered:

- **Challenges in welding 904L stainless steel** including issues of solidification cracking, high thermal expansion, and porosity.
- **Selection of welding techniques and filler materials** suitable for achieving high-quality joints.

- **Heat treatment considerations** to maintain microstructural stability and prevent degradation.
- **Practical applications in heat exchangers**, particularly in industries such as petrochemical, chemical processing, and power generation.

Mr. Behera also emphasized how **advancements in welding processes and non-destructive testing (NDT)** are improving the reliability and service life of equipment fabricated using this alloy.

Participation and Interaction

The lecture attracted participants from both academic and industrial backgrounds. Attendees actively engaged in the interactive session, raising questions about **practical challenges faced in welding high-alloy steels**, as well as the role of modern welding methods in improving **fabrication efficiency and cost-effectiveness**.

The speaker provided practical insights by drawing from **real-world industrial case studies**, making the session highly relevant for both students and professionals.

Key Takeaways

The programme helped participants gain knowledge about:

- **Unique properties of 904L stainless steel** and its industrial significance.
- The **difficulties in welding** this alloy and ways to overcome them.
- **Best practices in heat exchanger fabrication** for long-term performance.
- The importance of **continuous skill development in welding technology** to meet evolving industrial requirements.

Conclusion

The online lecture on **“Weldability Characteristics of 904L Stainless Steel for Heat Exchanger Applications”** was both insightful and technically enriching. It successfully bridged theoretical knowledge with industrial practices, offering participants a clear understanding of how advanced materials and welding technologies are shaping modern engineering solutions.

The event concluded with an appreciation note to the resource person and organizers. Participants also received **e-certificates**, adding value to their professional learning journey.



The Institution of Engineers (India)

TIRUCHIRAPPALLI LOCAL CENTRE

BHEL Main Office Road, Tiruchirappalli -620 014, Tamil Nadu, India.

CERTIFICATE OF PARTICIPATION

This is to certify that **Pranav Pravin Kute** has actively participated in the National Convention Day Webinar on Theme: "A Comprehensive study on the weld ability characteristics of 904L Stainless steel heat Exchanger Application" Organized by The Institution of Engineers (India), held virtually on **21-04-2025**.

Dr. S. Ravimaran.
Chairman

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CERTIFICATE OF PARTICIPATION

This is to certify that **Dr. Sharad Kisan Nirgude** has actively participated in the National Convention Day Webinar on Theme: "A Comprehensive study on the weld ability characteristics of 904L Stainless steel heat Exchanger Application" Organized by The Institution of Engineers (India), held virtually on **21-04-2025**.

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CERTIFICATE OF PARTICIPATION

This is to certify that **Diksha Dilip Jagtap** has actively participated in the National Convention Day Webinar on Theme: "A Comprehensive study on the weld ability characteristics of 904L Stainless steel heat Exchanger Application" Organized by The Institution of Engineers (India), held virtually on **21-04-2025**.

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This is to certify that **Sonawane Mansi Sunil** has actively participated in the National Convention Day Webinar on Theme: "A Comprehensive study on the weld ability characteristics of 904L Stainless steel heat Exchanger Application" Organized by The Institution of Engineers (India), held virtually on **21-04-2025**.

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This is to certify that **Ekta Prakash Davande** has actively participated in the National Convention Day Webinar on Theme: "A Comprehensive study on the weld ability characteristics of 904L Stainless steel heat Exchanger Application" Organized by The Institution of Engineers (India), held virtually on **29-04-2025**.

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This is to certify that **Piyush Prabhakar Wagh** has actively participated in the National Convention Day Webinar on Theme: "A Comprehensive study on the weld ability characteristics of 904L Stainless steel heat Exchanger Application" Organized by The Institution of Engineers (India), held virtually on **21-04-2025**.

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This is to certify that **Malode Tanvi Balaji** has actively participated in the National Convention Day Webinar on Theme: **“A Comprehensive study on the weld ability characteristics of 904L Stainless steel heat Exchanger Application”** Organized by The Institution of Engineers (India), held virtually on **29-04-2025**.



Dr. S. Ravimaran.
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