METI
Ministry of Economy, Trade and Industry

AOTS

CII
Confederation of Indian Industry

Kansai Economic Federation
<KANKEIREN>

Invitation

Technical Seminar and Workshop
on
High Precision Arc Welding Technology in India

22 – 23 Aug 2018; Hotel ITC Grand Chola, Guindy, Chennai

Industry Partners

Panasonic

KOBELCO

Iwatani

METI Ministry of Economy, Trade and Industry

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We, the Confederation of Indian Industry (CII) have joined hands with Association for Overseas Technical Cooperation and Sustainable Partnerships (AOTS), entrusted by Ministry of Economy, Trade and Industry (METI), Japan, would like to invite you to the Technical Seminar and Workshop on High Precision Arc Welding Technology in India. **No fee will be charged for participation, but registration in advance requested.** The seats are limited.

Seminar Venue: ITC Grand Chola, Guindy, Chennai
Demonstration Venue: Advanced Training Institute, Guindy, Chennai

Bus facility will be available for all delegates to visit Demo venue

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Plot 249-F, Sector-18, Udyog Vihar Phase – IV
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Mr. Amrit Yoga, Panasonic Welding Systems India
Unit-D, Industrial Plot No.1, Village Bid Dadr, Jhajjar, Haryana-124103
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Day 1 : Programme (1000 am – 0600 pm)

		<Day 1> 22nd Aug (Wed)
Main lecture		・ JWRI Professor Ito —Importance of high precision arc welding technology and trends in new technology— "Welding metallurgy (tentative)" ・ JWES Mr. Sato —Importance of International Standards on welding quality control and qualification of welders—
Afternoon Session	Special lecture	・ Special Seminar for Thick plate metal fabrication industry
	Demo	・ Demonstration of latest Japanese technology – Welding machines and welding robots (Thick plate welding for heavy engineering industry)

Day 2 : Programme (1000 am – 0630 pm)

			<Day 2> 23rd Aug (Thu)
Main lecture			・ KOBELCO Mr. Ikeda Introduction of Japanese latest welding material technology to improve welding quality ・ IWATANI Mr. Yoshida Introduction of Japanese latest shield gas technology to improve welding quality ・ Panasonic Mr. Hirota Latest technology of welding equipment (including DDL welding and IoT for welding process)
Afternoon Session	Special lecture	Lecture	・ "High Performance Japanese Welding Equipment and Welding Filler materials available in India" Instructors: PWSI, KWI
	Demo	Demo	・ Demonstration of latest Japanese technology – Welding machines and welding robots (Thin plate welding)
	Certificates		Certification of Training & Participation

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Introduction of the Seminar (Day 1)

大阪大学 OSAKA UNIVERSITY

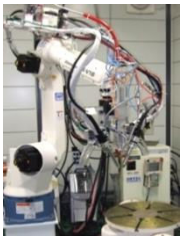
50th 1972 2022 JWRI OSAKA UNIVERSITY

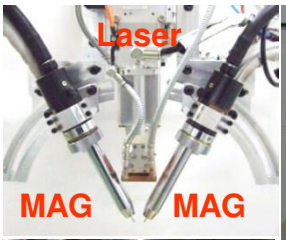
Joining & Welding Research Institute, Osaka Univ.

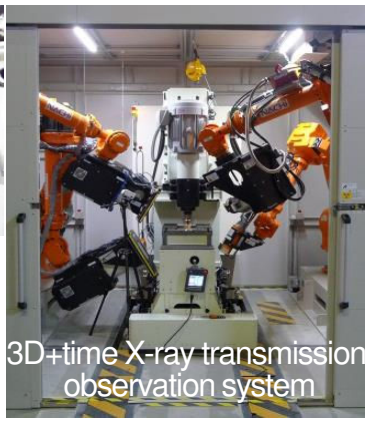
JWRI, Osaka University

Only institute in Japan that conducts "Joint Usage/Research Center on Joining and Welding

Major objects: Improving the efficiency, quality and performance of welding and joining, created advanced materials and composites, provided high performance surface modifications, and developed new welding and joining technologies, using various heat sources and advanced systems for visualization, analysis, evaluation and simulation.







JWRI consists of three divisions + one research center :

"Materials Joining Process" for providing scientific bases for generation-conversion-transportation and interaction with materials

"Materials Joining Mechanism" for investigation of the physical and chemical properties of high performance joints and composites, and the control of the joint microstructure by highly-controlled material processing

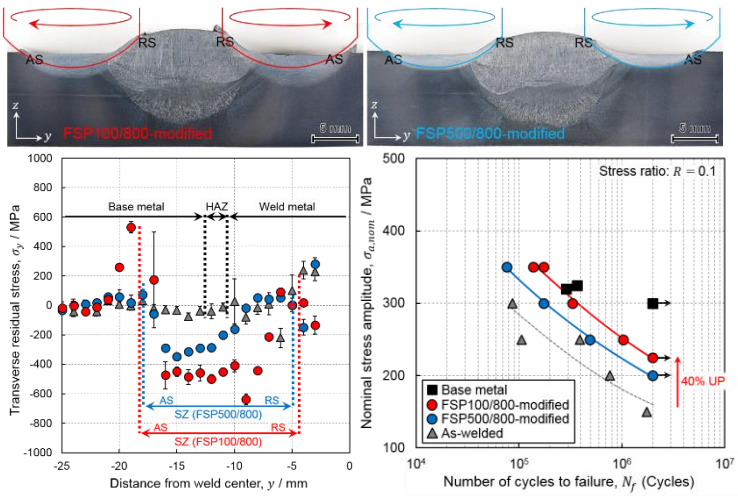
"Materials Joining Assessment", for the construction of the total system of functional assessment for various structures from large-size welded structures to micro structures,

"Smart Processing Research Center" for advanced processing.

Kazuhiro ITO,
Materials Joining Mechanism

Direct Application of FSP to Fusion Weld Toes of High-strength Low-alloy Steel Joints as Post-weld Treatment

- Introduction of Osaka Univ. and JWRI (Research activity, Relations & Collaborations, International exchange, and positions in International Institute of Welding)
- Basic Knowledge: Common Materials in our life, Plastic Deformation & Hardening Mechanisms
- In Weld Metals & Heat Affected Zones, Relationship between Microstructure and Mechanical properties
- How the Severe Accidents related Fatigue Properties of those WM and HAZ
- Recent Research Topics Improving Fatigue Properties of HSLA joints using Direct Application of FSP using a Spherical Tip Tool.



Introduction of the Seminar (Day 1)

The Japan Welding Engineering Society (JWES)

Established: 1949

Major activities:

- To conduct researches and investigation of welding and joining, and to publish their accomplishments.
- To develop the standards (ISO, JIS, WES) and regulations based on the accomplishments of the research/investigation.
- To perform the qualification/certification activities from a viewpoint of the quality assurance.
- To contribute internationally through the activities of standardization, education and certification.
- To provide the welding technical knowledge, information and education tools.

Mr. Masaharu SATO
JWES, Qualification
& Certification Dept.

Welding is a basic fabrication process by joining, whose final finished product can not be fully assessed and verified for meeting the specifications by inspection of the finished product. In such "Special Process", manufacturers are required to have systematic and continuous control to achieve a sound weldment.

ISO 9001 and ISO 3834 standards propose a systematic approach to be adopted by manufactures to ensure quality in the final finished product requiring **Validation**, and **Periodic revalidation**, i.e. "Review", "Qualification of Welding Procedure and Personnel", etc. in order to meet the client's specification.

- Presentation

Part I: International standards regarding quality management and basic principles /application of ISO 9001 and ISO 3834.

> Results of questionnaire on the standards for welding quality control
> Reasons for using ISO 3834s
> Application of ISO 3834s : Example of checklist

Part II: Examples of welder qualification/certification schemes

> Comparison of qualification schemes
> Example of welder training scheme in a Japanese manufacturer

- Objectives and benefits

> increase awareness on the role and importance of ISO 3834,
> increase awareness of the factors affecting weld quality, to achieve quality outputs.

Introduction of the Seminar (Day 2)

Panasonic

Panasonic Smart Factory Solutions Co., Ltd.(PSFS)

Overview of Panasonic's welding business

■Welding Business : From 1957
■Main Products:
- Welding Machine
- Welding Robot
- CO_2 Laser Oscillator
- Laser Welding System (Direct Diode Laser)

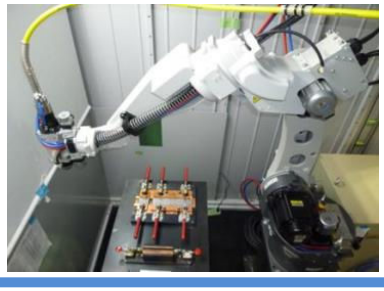
Mr. Yukinori HIROTA
PSFS, Thermal Fabrication System
Business Unit, Planning Dept.

Lecture theme: Introduction of Japanese latest technology of welding equipment realizing quality improvement and total cost improvement

We are going to introduce at this seminar, regarding
“Arc Welding” and “New technology of Panasonic machine”.

■Arc Welding
I will explain regarding the basic of arc welding, including the following issues.
- Classification of arc welding
- Features of welding structure
- Good Welding and Weld Defects etc.

■New Technology of Panasonic welding machine
I will explain the state of the art technology of welding machine by Panasonic, including the follow issues.
- Current Waveform Control with High Speed Video Movie
- Very few spatter process by Super Active TAWERS
- Direct Diode Laser Technology and Remote Laser Welding System
- Auto Inspection System for Weld bead etc.
- Solutions by IoT Technology in welding process etc.



Introduction of the Seminar (Day 2)

Iwatani

Iwatani Corporation

Company overview

In May 1930, Naoji Iwatani Shoten (the predecessor of Iwatani) was established to sell oxygen, welding rods, and carbide.

In 1953, the company started sales of LP gas for the consumer market.

In 1958, the company started the hydrogen business.

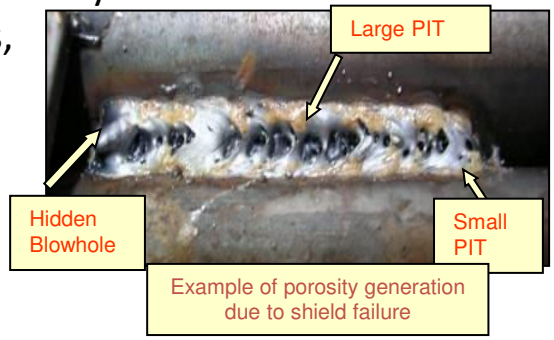
Iwatani developed business domestically and internationally, positioning household fuel, industrial fuel, and metals as our core businesses. At present, the company builds and operates hydrogen stations in Japan toward the realization of a society in which hydrogen energy is widely used.

The corporate philosophy is “Become a person needed by society, as those needed by society can prosper.” Iwatani is engaged in business activities with Gas & Energy as the corporate concept.

Iwatani Corp. R&D Center
Mr. Yoshifumi Yoshida

Lecture theme: Basic knowledge regarding shielding gas and the introduction of actual cases of use in Japan

Shielding gas is used to suppress defects caused by the external air.
Without an appropriate flow of shielding gas,
Defects will be generated, resulting
In the deterioration of joint strength.



The role of shielding gas is not limited to the Suppression of defects.

Use a robot to seek high efficiency, high quality welding
In case MAG (Ar + CO_2) is used. In Japan, high efficiency,
High quality welding to simplify post weld process
Three kinds of mixed gas (Ar + CO_2 + He) are used.

CO_2

In this seminar, the fundamental role of shielding gas,
MAG Effect of gas, three kinds of mixed gas used in Japan
And We will compare with MAG gas and explain examples.
Also, gas for welding stainless steel or aluminum
I will also explain the points of attention.

MAG（Ar+CO_2）

Introduction of the Seminar (Day 2)

KOBE STEEL LTD.

Company Overview

KOBE STEEL was founded in 1905 in KOBE, JAPAN and has several business areas of Iron & steel, welding, aluminum, & cupper, machinery and electric power . “KOBELCO” is a brand name of KOBE STEEL Group and has capitalized on the synergy across business segments in numerous fields.

High-quality welding materials are essential in such diverse sectors as automotive, construction, shipbuilding and energy related facilities. Steel grade and thickness varies by industrial applications and proper combination of welding material and process needs to be selected.
In this seminar, unique technologies applied in KOBELCO’s welding materials are presented.

1) Less- slag type solid wire for automotive industry.
2) Less- spatter type welding process for construction industry.
3) Reliable Cr-Mo steel welding materials for pressure vessel and power boiler industry.

Special lecture (Day 1)

Special lecture

Panasonic

Seminar for Welding Workers of middle or thick plate, including Construction Equipment Industry

Lecturer : Mr. Yukinori HIROTA
Panasonic Smart Factory Solutions Co., Ltd,
Thermal Fabrication System Business Unit, Planning Dept.

We will introduce our Panasonic solutions for middle or thick plate welding in this seminar. For example, ① High deposition welder : new model YD-700VH1 ② Welding systems for easy and precise welding of middle or thick plate : touch sensor, arc sensor, tandem welding and welding software, and ③ Important points for multi pass welding : weld defects and countermeasures for them and regarding weld strength. Please look forward to this seminar.

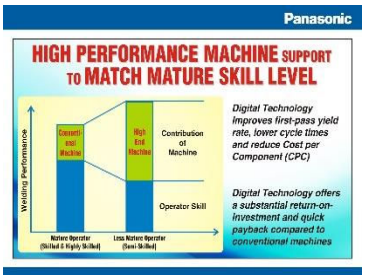
Demonstration of thick plate welding

By Panasonic & KOBELCO

Demonstration of thick plate welding for heavy industry (construction equipment, railway, etc.)
Latest Japanese technology Arc welding Machines & Robots

➢ **Full digital Machine demonstration , plate thickness > 5 mm up to 10 mm**

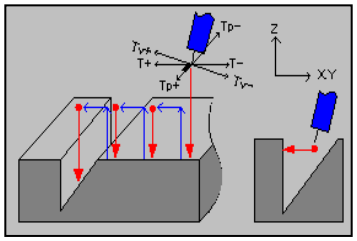
- Supports less mature welder to produce mature skill weld



- Up to 75% spatters reduction

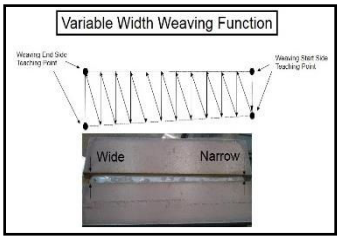
- Supports welder to produce high quality weld

➢ **Robot demonstration – High-Power TAWERS for Thick plates, plate thickness > 5 mm up to 10 mm**
Touch Sensor function -



Groove touch sensor function

Variable width weaving function



Special lecture (Day 2)

Lecture by Panasonic Welding Systems India / KOBELCO Welding India

Japanese equipment/welding materials available in India

Panasonic Welding Systems India (PWSI) is a part of Panasonic Corporation, Japan ,a fortune-500 company. PWSI has a state-of-the-art manufacturing facility of latest Arc Welding Equipment (MMA, MIG/MAG & TIG) at Jhajjar near Gurgaon, Haryana in India. PWSI imports Arc welding Robots from its parent company in Japan and caters to Indian industry. PWSI has its customers in various industry segments like Automotive, Construction equipment, Railways, Project, Power, Ship building, Process industry, General fabrication etc. We will discuss about latest technology Arc Welding Equipment which support operator to achieve high productivity.

Kobelco Welding India Pvt. Ltd., Gurugram is 100% subsidiary of Kobe Steel Ltd Japan Welding Division, providing Technical Commercial services to Indian Customer, We are world leading manufacturer and supplier of Welding consumable for all grade, KWI is supplying Welding Elctrodes, Welding Filler wire, Flux cored wire, SAW wire ,Flux. Today we will discuss Kobelco Flux cored wire and Metal cored wire for Thick plate application like Rail Car, Construction Equipment, Building structures etc..

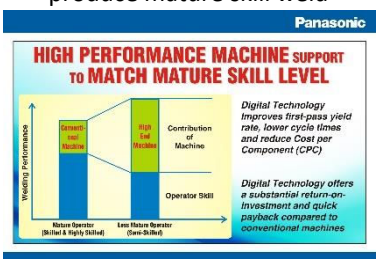
Demonstration of thin plate welding

By Panasonic & KOBELCO

Demonstration of thin plate welding for 2W and 4W industry
Latest Japanese technology Arc welding Machines & Robots

➢ Full digital Machine demonstration , sheet thickness < 3 mm

- Supports less mature welder to produce mature skill weld



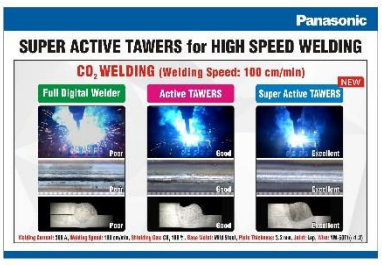
- Up to 75% spatters reduction

- Supports welder to produce high quality weld

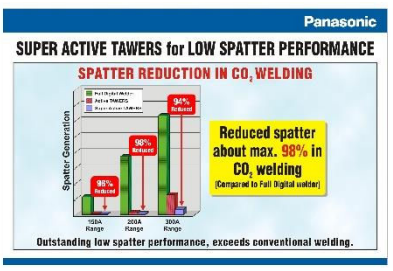
➢ Robot demonstration - Super Active Tawers , sheet thickness < 3 mm

- World's fastest Arc welding robot

- International level weld bead penetration & geometry



- Spatter reduction in CO2 welding -98%



Please email this form to
soumanil.mukherjee@cii.n / amrit.yoga@in.panasonic.com
By 17th Aug 2018

Registration form

Technical Seminar and Workshop on High Precision Arc Welding Technology in India
22 – 23 Aug 2018; Chennai

We are pleased to nominate the following:

No	Name	Designation	Mobile	22nd	23rd
1					
2					
3					
4					
5					

Certificates to be awarded to the participants those who attend both the days

Name of Company/Organization _____
Address: _____
Phone/Mobile: _____
E-mail: _____
Name of Representative of the company: _____
Designation: _____
Signature : _____

Industry Partners

Activity pictures of workshop in FY2017

1. Seminar by Japanese instructors

Lectures by professors from JWES & JWRI on importance of certification scheme for welders, and actual cases in Japan and issues in India and welding mechanics design & metallurgy

Experts responding to many questions from participants

2. Demonstration of Japanese welding equipment

Demonstration of digital welding equipment (at College of Engineering, Pune)

Demonstration of latest welding robot (at College of Engineering, Pune)

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