

# Residual stresses and defects in modern welding and additive manufacturing

**Webinar  
NOW AVAILABLE**  
Register below

Prof Anna Paradowska setting up an aluminum engine block for residual strain measurement.

**With the advent of greater demand for online training, HERA, IIW India, SAIW and the CWB Association are cooperating and collaborating** to transfer the knowledge and experience of world experts into as many countries on a global basis.

The four organizations will arrange for webinars and eCourses to be presented by such world experts to meet the challenges of different time zones, the need to assist individuals and industries to optimize their training times as well as improve their national welding capabilities.

You can make enquiries and bookings with each organization offering the course most suitable for your needs.

Links for registration are given later in this brochure.

This presentation is brought to you by:

## **Prof Anna Paradowska**

Industry Engagement Manager (since 2014) at the Australian Centre for Neutron Scattering (ACNS), Australian Nuclear Science and Technology Organization (ANSTO) as well as Conjoint Professor in Advanced Structure Materials (since 2019) at The University of Sydney.

Contacts at each organization for more detailed discussion on all future eCourses to be organized are:

**Michail Karpenko** • HERA • Email: mkarpenko@hera.org.nz • Asia and Australasia

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# Residual stresses and defects in modern welding and additive manufacturing

**Presenter: PROF ANNA PARADOWSKA**

**Industry Engagement Manager at the Australian Centre for Neutron Scattering (ACNS)**

This presentation will focus on the challenges and highlights of residual stress and defect assessment using several portable and non-portable techniques for welding and additive manufacturing components.

- Welding, cladding and repairs in civil, energy mining and transport applications.
- Additive manufacturing and composites for small and large-scale applications
- Non-destructive and destructive residual stress and defects assessment for fitness for purpose

**Anna Paradowska** is an Industry Engagement Manager (since 2014) at the Australian Centre for Neutron Scattering (ACNS), Australian Nuclear Science and Technology Organisation (ANSTO) as well as Conjoint Professor in Advanced Structure Materials (since 2019) at The University of Sydney.

She has a PhD in Mechanical Engineering from Monash University (2008) and a MSc degree in Materials Science Engineering from Wroclaw University of Technology (2001), Poland.

Anna is an expert in neutron diffraction stress analysis and one of her goals in her research is to relate residual-stresses, mechanical and metallurgical properties to manufacturing procedures and integrity requirements of engineering components, in particular in additive manufacturing and welded structures.

Her goal is to support Australian and global industry through building long-term collaborations and partnerships with universities, other research organisations, and businesses. She has made a significant impact on the development of industrial engagement at ACNS and the growth of a portfolio of local and international commercial clients, which includes CSIRO, DSTG, TWI, Hardchrome Engineering, Toyota, Honda, DMTC, AMRC with Boeing, Jemena, Zinfra Group and more.



## **WHERE and WHEN:**

The WEBINAR will be of one and a half hours duration including half an hour for questions and discussion. It will be held on four separate occasions to accommodate the four different regions of the globe: The Americas; Africa and Europe; Indian sub-continent; Asia and Australasia.

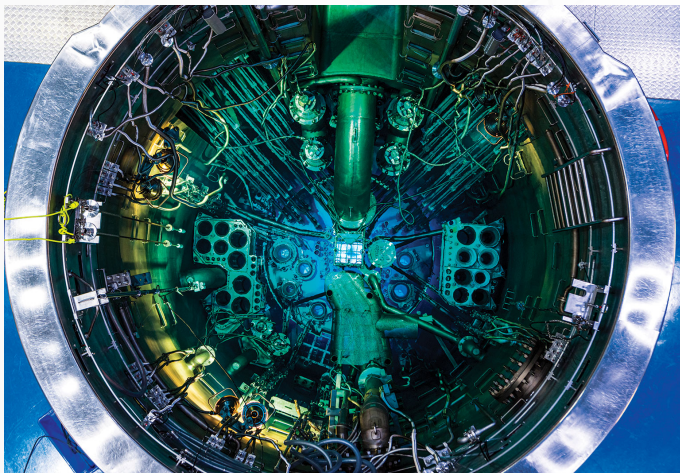
## **WHO SHOULD ATTEND?**

Designers, structural engineers, consultant engineers, mechanical engineers, welding and production engineers, maintenance and quality control engineers, as well as researchers. Delegates are encouraged to bring along their problems to contribute to discussions and local case studies.

## **WHAT INDUSTRY AREAS THE WEBINAR IS RELEVANT FOR?**

The WEBINAR will be especially relevant to all professionals in automotive, aerospace, steel construction, steel bridge design, power generation, naval and shipbuilding, offshore construction, pipeline and other industries that apply welding and additive manufacturing.

## **The OPAL Research Reactor at ANSTO**



Australian OPAL research reactor at ANSTO has several instruments available for materials science and engineering applications.

The instruments have a unique non-destructive ability to determine critical imperfections, assist performance of engineering apparatus via radiography and tomography, measure internal residual stresses and textures in crystalline materials, such as metals, alloys, ceramics, and composites.

These measurements can be carried out on real engineering components, mock-ups, or test samples with minimal preparation. This information provides direct impact into optimization of modern manufacturing processes, improved product reliability, enhanced design performance, reduced production cost, and extended life prediction on significant engineering assets.

The versatile team at ANSTO has established a strong record in assisting Australian and international researchers and engineers across a wide range of engineering projects. The newly developed Australian Stress Engineering and the Solid-State Manufacturing Centres, and a Node of Sovereign Manufacturing Automation for Composite (SoMAC CRC) at the University of Sydney are building on this experience and collaboration.

Support and advice is available to industry as well as academia on manufacturing, characterization and assessments of welding, additive manufacturing and composites.

## EVENTS FOR AMERICAS

Course part	Course Date	Location / time zone / starting time
1	18 September, 2023	Toronto/Michigan (EST): 10:00 - 11:30 am Calgary & Edmonton (MST): 8:00 - 9:30 am Regina (CST): 8:00 - 9:30 am West Coast Canada and USA (PST): 7:00 - 8:30 am Atlantic Canada and USA (ADT) 11:00 - 12:30 pm Sao Paulo, Brazil (BRT) 11:00 - 12:30 pm Santiago Chile (GMT): 11:00 - 12:30 pm

- **Registration link:** <https://www.eventbrite.ca/o/cwb-association-33898968275>

**CLICK HERE TO REGISTER**

## EVENTS FOR AFRICA AND EUROPE

Course part	Course Date	Location / time zone / starting time
1	19 September, 2023	Johannesburg-CET: 13:00 - 14:30 Nigeria-London: 12:00 - 13:30 Istanbul: 14:00 - 15:30

- **Registration link:** <https://www.saiw.co.za/residual-stresses-and-defects-in-modern-welding-and-additive-manufacturing-registration-form/>

**CLICK HERE TO REGISTER**

## EVENTS FOR ASIA AND AUSTRALASIA

Course part	Course Date	Location / time zone / starting time
1	20 September, 2023	Auckland: 17:00 - 18:30 Sydney: 15:00 - 16:30 Perth: 13:00 - 14:30 Singapore: 13:00 - 14:30 Bangkok: 12:00 - 13:30 Seoul: 14:00 - 15:30 Tokyo: 14:00 - 15:30

- **Registration link:** <https://www.hera.org.nz/event/defects-in-modern-welding-sept-23/#1563309554764-feaba061-58b5>

**CLICK HERE TO REGISTER**

**EVENTS FOR SAARC AND MIDDLE EAST**

Course part	Course Date	Location / time zone / starting time
1	27 September, 2023	India & Sri Lanka: 16:30 - 18:00 Bangladesh: 17:00 - 18:30 Saudi Arabia, Oman, Kuwait, Bahrain: 14:00 - 15:30 UAE-Dubai, Sharjah, Abu Dhabi: 15:00 - 16:30

● **Registration link:** <https://tinyurl.com/5am5j97j>

**CLICK HERE TO REGISTER**

**Cost**

The course registration is free to all applicable areas.

\*Membership may be required\*

**REGISTER TODAY**

To register, follow the registration links for regions below:

- **Asia and Australasia:** <https://www.hera.org.nz/event/defects-in-modern-welding-sept-23/#1563309554764-feaba061-58b5>
- **Americas:** <https://www.eventbrite.ca/o/cwb-association-33898968275>
- **Africa and Europe:** <https://www.saiw.co.za/residual-stresses-and-defects-in-modern-welding-and-additive-manufacturing-registration-form/>
- **SAARC and Middle East:** <https://tinyurl.com/5am5j97j>

**Cancellations**

Please Note: The organizers reserve the right to cancel the webinars due to insufficient registrations or other reasons beyond their control, as well as altering the programme if they deem it necessary. The organizers have the right to refuse registrations. Refunds (where applicable) are available up to 7 days prior to event start.

**Stay tuned for future courses by WIN!!**