

9th International Workshop on Advanced Remanufacturing

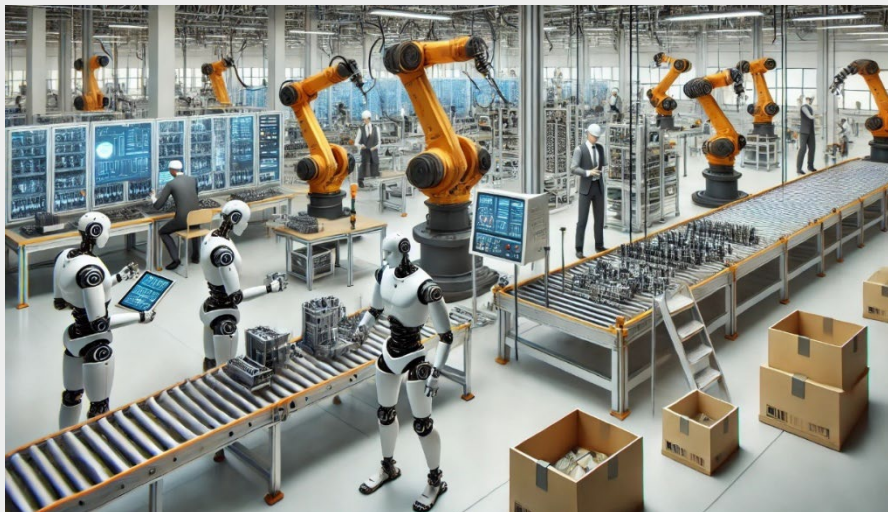
IWAR 2025

Remanufacturing for the circular economy transition

October 15 to 17, 2025

Campus “Fábrica de Armas”, School of Industrial and Aerospace Engineering,
Universidad de Castilla-La Mancha, Toledo, Spain

CONFERENCE PROGRAM



Day 1. Wednesday, 15 October.

19:30 – 21:00. **Welcome cocktail.**

(Location of the event: [Palacio Cardenal Lorenzana](#). Calle Cardenal Lorenzana 1, Toledo)

Day 2. Thursday, 16 October.

8:30 – 9:00 **Registration**

(Location of the event: [Sala de Grados Edificio Sabatini. Campus Fábrica de Armas](#). Toledo)

9:00 – 9:20 **Welcome & Official Inauguration**

Prof. María Arantzazu Gómez Esteban, Head of the School of Industrial and Aerospace Engineering, UCLM

Prof. Francisco Javier Ramírez Fernández, IWAR 2025 Conference Chair.

9:20 – 10:00 **Keynote Presentation.** *“Robotic skill acquisition, transfer and augmentation of disassembly*

skills for remanufacturing”. Dr. Yongjing Wang, BEng(1st), PhD, CEng, FHEA, FIMechE, SMIEEE, University of Birmingham, United Kingdom.

10:00 – 11:40 **Oral session I –*Robotic disassembly***

Session Chair: Dr. Raquel Villena Ruiz

A MILP model for planning Robotic Disassembly Sequences under high uncertainty conditions
Miguel Reula, Consuelo Parreño-Torres and F. Javier Ramirez

A Reinforcement Learning-Enhanced Bees Algorithm for Efficient and Low-Emission Robotic Disassembly

Fatih Eker and Duc Truong Pham

Digital product passport deployment for intelligent robotic disassembly

Terrin Pulikottil, Tom Machiels, Hao Qin, Yifan Wu and Jef R. Peeters

Exploring Disassembly Challenges: Jamming, Compliance Effects, and Reinforcement Learning in Complex Peg-Holes Processes

Farzaneh Goli, Yongjing Wang and Mozafar Saadat

VirtualReality-Based Virtual Disassembly System for End-of-Life Electric Vehicle Batteries

Yuqin Zeng and Jun Huang

11:40 – 12:10 **Coffee break**

12:10 - 13:50 **Oral session II – Robotic disassembly / Disassembly mechanisms / AI for remanufacturing**

Session Chair: Dr. Celia Garrido Hidalgo

Modelling of human robot collaboration for remanufacturing using discrete event simulation and optimising the process flow

Remo Prior-Calver and Michael Packianather

A Knowledge Graph System for the Intelligent Disassembly of End-of-Life Electric Vehicle Batteries

Mingquan Jiang and Jun Huang

Scalable Modular Infrastructure for E-Scooter Maintenance: Integrating Digital Assistance Systems for Sustainability and Efficiency

Henrik Schu and Matthias Vette-Steinkamp

Embedded Artificial Intelligence System for Remanufacturing in Industry 5.0

Adrián Muñoz-Alarcón, Elena Garrido-Martínez, Luis Roda-Sanchez and Celia Garrido-Hidalgo

Sequence Planning and Task Allocation with Human Fatigue and Recovery in Human-Robot Collaborative Disassembly

Hamid Furkan Suluova and Duc Truong Pham

13:50 - 15:00 **IWAR 2025 group photo and lunch.**

15:00 – 16:20 **Oral session III – AI for remanufacturing / Circular Economy / Green supply chains / IoT and Industry 5.0**

Session Chair: Dr. Estefanía Artigao Andicoberry

Switching between products on one disassembly production cell; Towards a more scalable, flexible, adaptive, intuitive, modular and interactive disassembly production cell

Mirjam Zijderveld and Jenny Coenen

Optimising Smartphone Remanufacturing: A Simulation Framework for Sustainable Component Recovery and Workflow Efficiency

Ahmad Attar, Natalia Hartono, Martino Luis and Voicu Ion Sucala

An Ontology-Based Approach to Harmonize Heterogeneous Battery Disassembly Information for Semi-Automated Processes

Lars Schaupeter and Matthias Vette-Steinkamp

LoRa Mesh Communications for Remanufacturing: an Industry 5.0 Approach.

Elena Garrido-Martínez, Adrián Muñoz-Alarcón, Celia Garrido-Hidalgo and Luis Roda-Sanchez

16:20 – 16:50 **Coffee break**

16:50 – 18:30 **Oral Session IV – Green Supply Chains / Repowering of power plants / Lifetime extension**

Session Chair: Mirjam Zijderveld

Top Management Behavior and Supply Chain Management: A Systematic Review for Theory and Practice in Sustainability Studies

Ilyes Adel Djebari, Sebastián Juan Bruque Cámara, María Isabel Roldán Bravo and Ron Piccolo

Unveiling the Role of Information and Digitalization Technologies of Industry 4.0 in Sustainable Supply Chain Management: A Literature Classification and Future Research Agenda

Iván Roca Murgado, José Moyano Fuentes, Juan Manuel Maqueira Marín and Noelia García Buendía

A Framework for Quantifying Environmental Impacts on End-of-Life Solar Photovoltaic Panels' Performance: A Systematic Review with a Unified Assessment Novel Scale

Behrouz Siami, Raquel Villena Ruiz and F. Javier Ramírez

End-of-life strategies for solar photovoltaic panels and battery systems. An international approach based on ICIRN Project

Carlos Miralles Sánchez, Estefanía Artigao Andicoberry, Sergio Martín, Martínez, Andrés Honrubia Escribano, Raquel Villena Ruiz and Emilio Gómez Lázaro

Enhancing Fault Detection in Wind Turbines through Overcoming Class Imbalance in SCADA Data

Estefanía Artigao Andicoberry, Jorge Luis Maldonado Correa, Sergio Martín Martínez and Emilio Gómez Lázaro

18:30 – 18:45 **Closing of the event and announcement of IWAR 2026**

21:00. **IWAR 2025 Gala Dinner**

[Restaurant "Venta de Aires", Pº Circo Romano 35, Toledo.](#)

Day 3. Friday, 17 October.

9:30 – 13:30 **Visit to the historic city of Toledo**

(Location for the start of the tour: *TBD*)

