

REcyclable MAterials DEvelopment at Analytical Research Infrastructures



Are you motivated to develop materials for a circular economy?

Do you have a brilliant scientific or industrial idea?

Are you faced with a specific challenge in your circular materials research?

‘Tailor-made Access Routes for Advancing Materials Development for a Circular Economy’



RICH Europe Seminar – 26 November 2024

ReMade@ARI – Who *are* we?

(for more info click [here](#))



- A consortium of **47 partners across 17 European countries**
- **Project coordinators:** Helmholtz-Zentrum Dresden-Rossendorf (**HZDR**), Germany
- At the core of the consortium : **ARIE facilities** from **six** networks
 - High **magnetic** field laboratories – European Magnetic Field Laboratory (**EMFL**)
 - **Electron** microscopes – **e-DREAM**
 - **Laser** light sources – **Laserlab-Europe**
 - Accelerator-based light sources – League of Accelerator-based **Photon** Sources (**LEAPS**)
 - Neutron sources – League of Advanced European **Neutron** Sources (**LENS**)
 - **Ion** beams – **RADIATE**
- Along with **non-ARIE** Network partners: **CERIC-ERIC**, **NanoEnvicZ** and the mono-energetic **positron** sources at the **ELBE** Centre for High-power Radiation Sources
- As well as the **University of Bonn** and the **Danish Technology Institute**.

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ReMade@ARI – What we offer?

(for more info click [here](#))



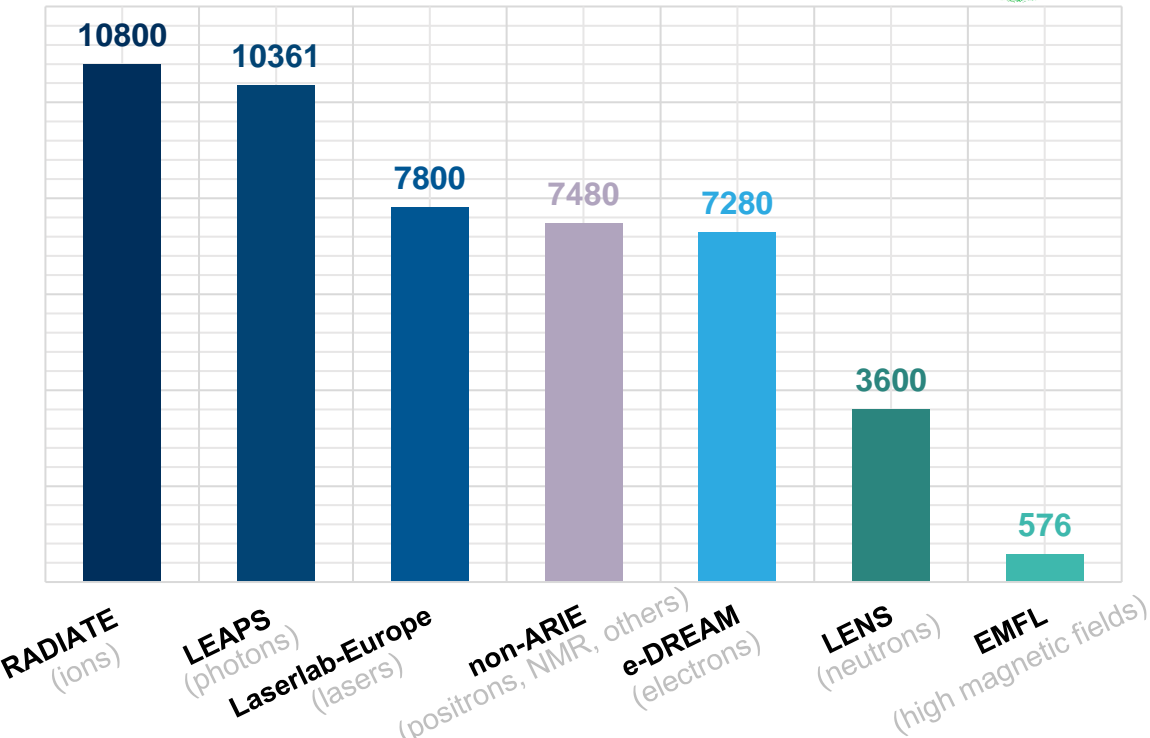
Our Technical Offer:

- ✓ access to **more than 50 RIs** across Europe (both TNA and VA)
- ✓ **50,000 hours of TNA**
- ✓ unprecedented portfolio of **20+ techniques**
- ✓ **3-tailor-made** access routes for scientists from **industry and academia**
- ✓ **single point entry** for more than one technique per proposal

Catalog of Techniques

Electron microscopy	Focused ion beam	High magnetic field	Ion beam composition mapping and imaging	Ion beam analysis - spectrometry
Ion beam materials modification	Laser photo chemistry and spectroscopy	Laser processing	Muon spectroscopy	Neutron-based elemental composition analysis
Neutron diffraction	Neutron imaging	Neutron reflectometry	Small-angle neutron scattering	Neutron spectroscopy
Positrons	X-ray diffraction	X-ray imaging	SAXS-WAXS (Small/ Wide-angle X-ray scattering)	X-ray spectroscopy
X-ray tomography		Nuclear magnetic resonance (NMR)	NanoEnvicz	

Total Access Hours



ReMade@ARI KPI's

- ❑ 50,000 TNA hours
- ❑ 500 User Projects
- ❑ 1000 Users
- ❑ 35 SME projects
- ❑ 10 Industry projects

ReMade@ARI – What we offer? (for more info click [here](#))

Our Science Support Offer:

- ✓ a project with a **heart of scientists**
- ✓ over **180 senior researchers** offer advice and expertise to the best combination of techniques
- ✓ **18 junior scientists** provide support along the whole value chain of their projects

Junior Scientists

Expertise in Ions / High Magnetic Fields / Positrons

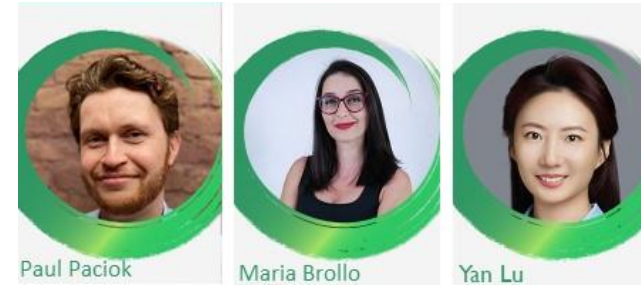


Expertise in Lasers



Junior Scientists

Expertise in Electrons



Expertise in X-rays



Expertise in Neutrons



+ over **180** senior researchers !!

ReMade@ARI – What we offer? (for more info click [here](#))

Our Education and Training Offer:

- ✓ available for **existing and potential RI users**
- ✓ training of **diverse techniques for material characterization**
- ✓ **empower** our user community
- ✓ goal to advance implementation of **Circular Economy practices**

Webinar series



Webinars 2024

9 February - 2pm | Peter Fouquet | ILL, France

Neutron spectroscopy studies of hydrogen and oxygen diffusion in energy materials

28 March - 10am | Giulio Cerullo | Polimi, Italy

Ultrafast transient absorption spectroscopy

12 April - 10am | Virginia Boix de la Cruz | ALBA, Spain

Unlocking Circular Economy Solutions: Industrial Access to Cutting-Edge Research Infrastructures with ReMade@ARI

16 May - 2pm | Matej Gabrijelčič | Kemijski Institut, Slovenia

Solid-state nuclear magnetic resonance used for operando studies of Na-ion batteries

24 May - 2pm | Daniela Comelli | Politecnico di Milano, Italy

Time-resolved fluorescence imaging

31 May - 10am | Virginia Boix de la Cruz | ALBA, Spain

Unlocking Circular Economy Solutions: Industrial Access to Cutting-Edge Research Infrastructures with ReMade@ARI

28 June - 2pm | Anna Mackova | NPI, Czech Republic

Ion beam modification and synthesis of materials and surfaces for sensorics, bioapplication and photocatalysis

5 July - 10am | Timur Nikitin | CLL, Portugal

The Circular Economy: How Raman Spectroscopy Can Help Close the Loop

19 July - 10am | Sven Luther | HZDR, Germany

Materials characterization in highest magnetic fields

6 September - 2pm | Kim Nygård | MAXIV, Sweden

Multiscale structural characterization by scanning SWAXS imaging

27 Sept - 10am | Cristian Manzoni | IFN-CNR & Polimi, Italy

Hyperspectral Imaging and microscopy

18 October - 2pm | Rui Fausto | CLL & UC, Portugal

Vibrationally Induced and Quantum Mechanical Tunneling Driven Chemistry

22 November - 10am | Andreas Stierle | UH & DESY, Germany

Exploring catalytic reactions from the ensemble average to the single particle limit using X-rays and scanning probe microscopy

6 Dec - 10am | Yvette Ngono-Ravache | CIMAP Caen, France

Polymer under ionizing radiation : an evolution towards recycling



Workshop series

- Zooming into Biobased Materials - Workshop on advanced **X-ray techniques** for studying biobased materials for circular economy at Lund, Sweden in **September 2024**.
- Energy materials in circular economy meet **X-rays and Neutrons** at Grenoble, France in **November 2024**.
- Application of ReMade@ARI **characterisation methods** to recyclable materials at Prague, Czech in **May 2025**.
- **Laser Spectroscopy and Photonics** for Circular Economy: Advancing Material Research and Sustainable Innovation at Heraklion, Greece in **June 2025**.
- ESRF **Industry** Workshop at Grenoble, France in **June 2025**.
- **Imaging/tomography** workshop at Grenoble, France in **October 2025**.

For Academic Research



- **ReMade-TNA:** Coordinated, easy and supported access for academic users

For Industry Research



- **ReMade-SME:** Coordinated, easy and supported access for SME users



- **ReMade-IND:** Coordinated, easy and supported joint access for industry and knowledge providers



ReMade – TNA “Mission-based trans-national access” (for more info click [here](#))



This is the next generation of the very traditional trans-national access scheme!



TARGET GROUP?

Researchers from **academia and industry** with materials R&D projects advancing the circular economy



BENEFITS?

- **easy, free and coordinated access to RIs** of the ReMade@ARI consortium
- **accommodation and travel expenses supported** (up to 2 researchers)
- submit a **pre-proposal** (optional) or a **full proposal**
- combine **two (or more) techniques**
- **Scientific advices** from the design of the experiments to data handling and analysis
- Obligation to **report / publish results in open access journals**



INTERESTED?

Pre-proposals: continuously open except the last 2 weeks before a call deadline

Full proposals: ONLY 2 calls remaining, apply by **March 2025** or **September 2025**

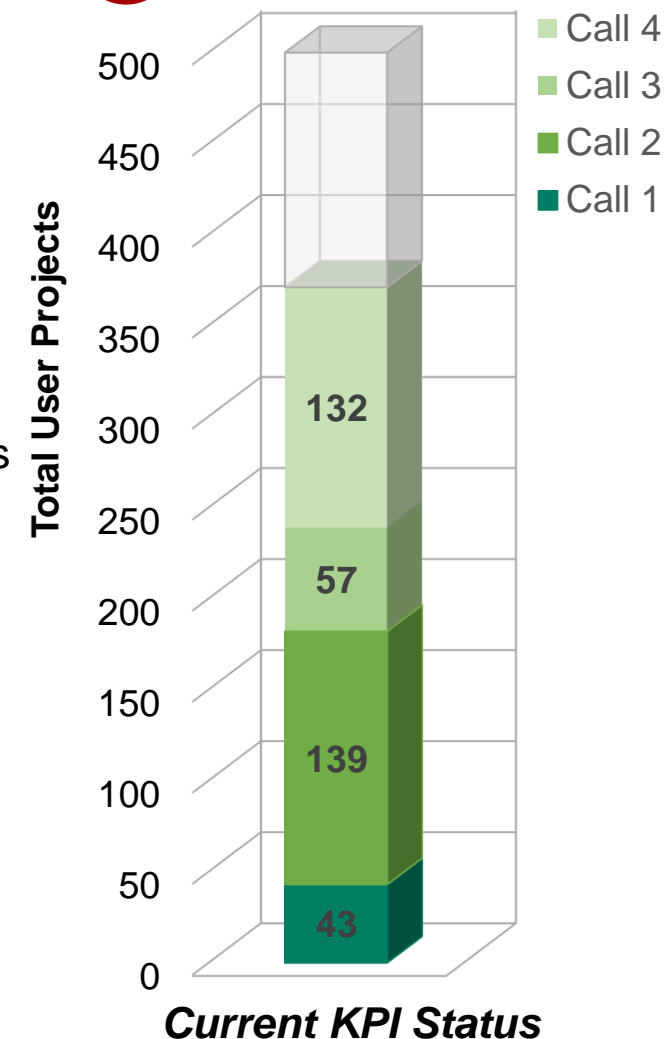


QUESTIONS?

Contact us: info@remade-project.eu



TNA



ReMade – SME “SME transnational access for Circular Economy” (for more info click [here](#))



A coordinated access for SMEs to ARI facilities to foster innovation for the circular economy!



TARGET GROUP?

Small and Medium Companies working on circular economy projects



BENEFITS?

- “Full service” access to Advanced Analytical Research Infrastructures:
- No deadlines - continuous application and evaluation process
- TNA requirement
- Fast and simple measurements (at least one technique, but more can be offered)
- Including data analysis
- Confidential results – no obligation to publish



INTERESTED?

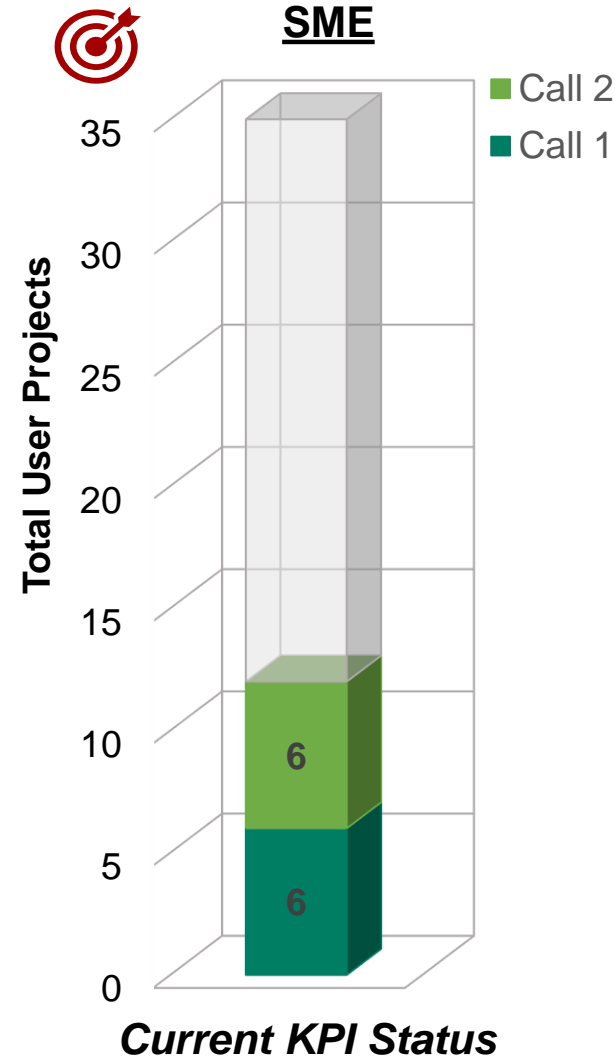
2nd Call: Continuous applications until 16 December 2024

3rd Call: Continuous applications from 3 February 25 until 15 December 2026



QUESTIONS?

Contact us: industry@remade-project.eu



ReMade – IND “Pioneer Innovation Pilots” (for more info click [here](#))

!SUCCESS!



Joint access for industries in partnership with knowledge providers to turn circular materials challenges into innovative solutions!



TARGET GROUP?

Companies in partnership **with a knowledge provider** (academic partners, RTOs, CROs, specialized service companies, etc.) working on circular economy projects at **Advanced Research Infrastructures**. **IND**



BENEFITS?

- **30,000€** grant for customization of access, e.g.:
 - Expert services by the knowledge provider
 - Consumables, sample environment
- **Proprietary access** against payment or ReMade-TNA with requirement for TNA and publication of results



INTERESTED?

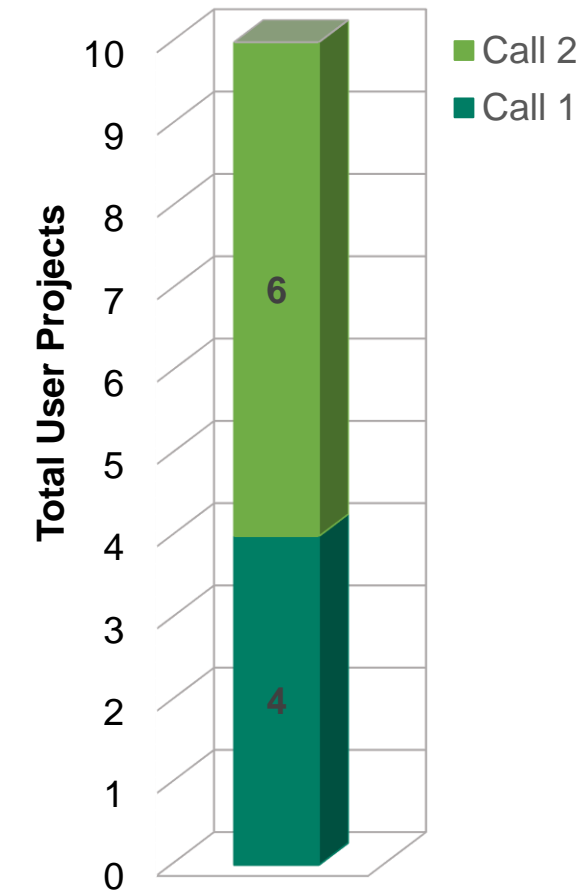
Final call closed August 2024. **No future calls.**

An OUTSTANDING SUCCESS with 10 proposals granted in total!



QUESTIONS?

Contact us: industry@remade-project.eu



KPI reached!

ReMade@ARI – in a nutshell



A hub for recyclable materials development for Circular Economy!

- 4 years (until August 2026)
- 47 consortium partners coordinated by HZDR, Germany
- > 50 analytical research infrastructures
- 50,000 hours of TNA
- a project with a heart of scientists
- 18 young researches and over 180 senior experts supporting users along the whole value chain of their projects
- possibility to submit “pre-proposals”
- a single entry point for 20+ techniques
- 3 target group-specific access routes to the facilities: ReMade-TNA, ReMade-SME, ReMade-IND
- over 15 MEUR (13.7 MEUR from the EU and 1.8 M EUR from SERI (CH) and UKRI (UK)) to accelerate the transition to a Circular Economy

You bring in the challenge,
we provide the measurements, the technical expertise and invaluable scientific support.

Apply to ReMade@ARI!



Check out
here!



Thank you for your attention!

remade-project.eu



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UK Research
and Innovation

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Confederazione Svizzera
Confederaziun svizra

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Research and Innovation SERI

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