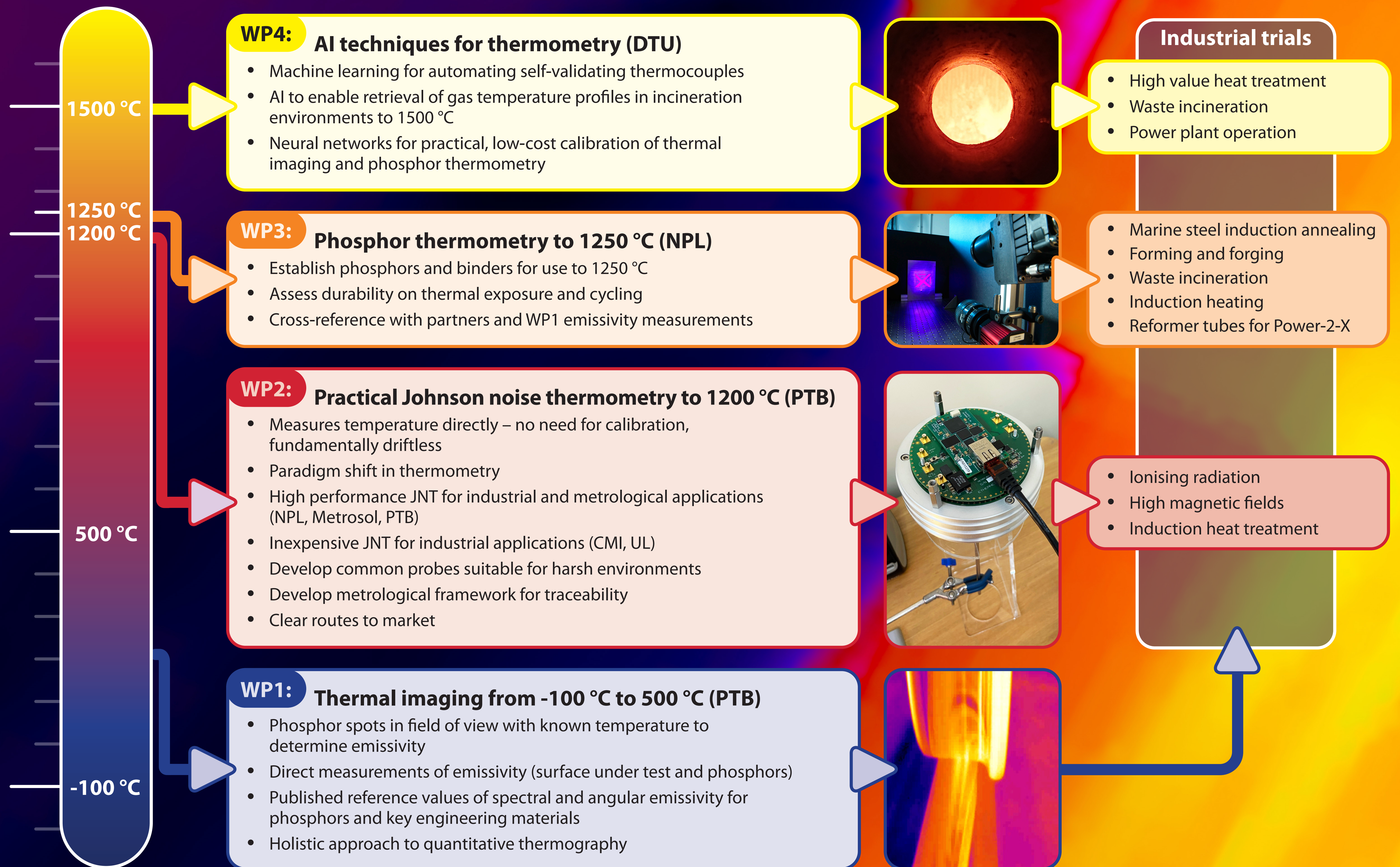


# Thermometry with embedded SI traceability for industrial applications

Enabling assured process temperature monitoring and control



## Industrial engagement

- B&W Volund** – Electricity generation through waste incineration / combustion (machine learning for gas thermometry)
- BAE Systems** – Marine welding and induction annealing (phosphor thermometry)
- Beamex** – Prototype industrial surface temperature reference
- CCPI Europe** – Aerospace heat treatment (machine learning for self-validating thermometry)
- Metrosol** – Development and commercialisation of JNT
- STRATH** (Advanced Forming Research Centre) – Aerospace heat treatment, forging and forming (phosphor, thermal imaging, JNT)

## Impact & uptake

- Written support from potential collaborators for case studies / demonstrations:
  - Boeing** (airframe manufacturing)
  - DLR** (gas turbines and supersonic aircraft)
  - Energatom** (power generation)
  - Magnicon GmbH** (commercialisation of JNT)
  - Rolls-Royce** (jet engines)
  - Topsoe** (reformer tubes)
- Strong representation on IEC committee for industrial thermometry and Nadcap/SAE committee for aerospace heat treatment
- Stakeholder community and industry-focused workshops
- Close engagement with academic and metrological community through 9 Peer-reviewed Open Access publications, 10 trade journal articles, and two briefing reports to the CCT

## Letters of support

The selected letters of support are from instrumentation companies, standards organisations, regulatory bodies, power generation companies and leading manufacturing organisations.

*"The accurate, reliable, and traceable measurement of temperature will be a requirement to ensure portions of the [nuclear] inventory remain safe in store and up to disposal"*

– Nuclear Decommissioning Authority, UK

*"Surface thermometry is critical to evaluate new cooling strategies for aircraft combustors"*

– ONERA, France

*"The accurate measurement of gas turbine blade temperatures [...] is crucial for blade health monitoring and component evaluation."*

– Siemens Energy, Germany

*"This research will significantly promote the practicality of the in-situ temperature measurement and corresponding industrial applications"*

– President of the CCT (BIPM)