



Joint Research Centre

Institute for Reference Materials and Measurements (IRMM)

https://ec.europa.eu/jrc



The JRC inside the European Commission













The JRC in the EU Policy Cycle









JRC's Support to EU policies and societal challenges examples



- EU's electricity grids; shale gas; biofuels
- Reducing experiments on animals; nanomaterials



- Food and feed safety & quality; GMOs; food security
- Responding to crises; Financial stability
- Nuclear safeguards; Nuclear safety and security





Performance mapping of JRC activities: publications

- Up to 3% belong to the top 1% most cited publications
- Up to 23% belong to the top 10% most cited publications
- In many scientific areas, the JRC scores similarly to the range of the Top-15 organisations
- JRC co-authored publications with 87% of the Top-100 ranked universities
- **JRC has formal agreements** with almost half of the universities in the Top-100 rankings





Institute for Reference Materials and Measurements (JRC-IRMM)







Evolution of JRC-IRMM

1957 originating from Euratom Treaty

1960 established as Central Bureau for Nuclear Measurements (CBNM)

1993 renamed `Institute for Reference Materials and Measurements'

2002 transfer of food & feed activities from JRC-IHCP to IRMM

2012 start of activities on aviation security





Institute for Reference Materials and Measurements

Director: E. Anklam

Knowledge Transfer &

Security

Standards for

Site Management





M. Wellens

Standards for **Innovation &** sustainable Development

H. Emons



P. Taylor

Standards for Nuclear Safety, Security & Safeguards

W. Mondelaers

Standards for Food **Bioscience**



F. Ulberth

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Scientific infrastructure facilities at the JRC-IRMM

- State-of-the-art analytical laboratories and production facility •
- Linear and Van-de-Graaff Accelerator, HADES underground laboratory •
- Airport security detection systems •





JRC- IRMM: committed to quality





JRC-IRMM's working areas

Advanced materials & nanomaterials Aviation security & security threats Environment Food and feed safety & quality Genetically modified organisms Health biomarkers & pathogens Nuclear safety, security and safeguards







JRC-IRMM's deliverables and quality assurance tools

- Reference materials
- Reference data
- Validated measurement methods
- Proficiency Tests
- Guidelines on measurement matters
- Scientific advice to policy

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JRC-IRMM's reference materials

- JRC-IRMM is a leading reference material developer worldwide
- > 800 different materials available (measurement standards)
- 20.000 units distributed yearly;
 20-30 new materials yearly

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Examples of (certified) reference materials



Biomarkers for health monitoring, e.g. for diagnosis of autoimmune disease and cancer treatment

Genetically modified organisms (GMOs)

Food additives, contaminants, ingredients, residues

Environmental pollutants

Nanomaterials and industrial materials

Nuclear safeguard materials

JRC-IRMM's reference (validated) methods

- Support to EU Member States for implementation of EU legislation
- Harmonisation and standardisation
- Support to international (standardisation) bodies





Selected examples of validated (reference) methods





JRC-IRMM's proficiency testing



- Support to EU Member States official and field laboratories
- Support to National Reference Laboratories
- >15 Proficiency tests (interlaboratory comparisons) yearly
- Topics range from nuclear, radioactivity measurements, food and feed control





JRC-IRMM's support to knowledge transfer





European Reference Laboratories (EU-RLs) for food and feed safety control in the JRC-IRMM

- Feed additives
- Heavy metals in feed and food
- Mycotoxins
- Polycyclic aromatic hydrocarbons
- European Reference Centre for control in the wine sector
- Water in Poultry





JRC-IRMM's work on authenticity proof/fraud detection





JRC-IRMM as data provider/host





JRC-IRMM's work on nuclear safety, security and safeguards



Nuclear data for safety of present and innovative nuclear energy systems

Post-Fukushima support

Harmonisation of the European radioactivity measurement system

Metrological tools for nuclear safeguards

Nuclear education & training

Open access to nuclear facilities

Thank you for your attention!

Measurements matter!

Visit us again on our Open Day Event on 4th October 2015!