



EUROPEAN  
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Community Research

# **ISTC and Euratom Framework Programme Projects Collaboration: Areas of Interest in P & T in FP6 and FP7**

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# Euratom Framework Programmes

- **European Community research has been organised in Framework Programmes (FP) of durations of 4-5 years since 1984**
- **The EURATOM Sixth Framework Programme (FP6) (2002-2006) "Research and Training Programme on Nuclear Energy" has just finished but some projects are still running and will end in 3-4 years.**
- **The Seventh multiannual Framework Programme of the European Atomic Energy Community (Euratom) for nuclear research and training activities (2007 to 2011) has just started on 1 January 2007. A Call for proposal has been published with a deadline of 2 May 2007.**





# International Cooperation

- **International Cooperation is an important element in the EU Research Policy.**
- **Cooperation agreements with Canada, USA and some other countries.**
  - **Technical cooperation with FP6 running projects such as EUROPART and EUROTRANS**
- **Cooperation with Russian Federation and Ukraine under ISTC (Moscow) and STCU (Ukraine).**
  - **COOPERATION FP5/FP6 and ISTC/STCU projects in the area of**
    - **Basic nuclear/material data and neutronics of ADS**
    - **Aqueous separation chemistry**





# EURATOM FP7 (2007-11) Nuclear Fission & Radiation Protection

**Geological disposal** of long-lived radioactive waste and the reduction of toxicity of radioactive waste through **partitioning & transmutation**

**Operational safety** of existing reactor systems and the **potential of future reactor systems** for safer, more efficient power plants and **competitive nuclear industry**

**Radiation protection** – especially risks from low doses, medical uses, emergency management and mitigation of the impact of **radiological terrorism**

**Key cross-cutting activities:**

- Support for **research infrastructures**
- **retaining competences and know-how** in all areas of nuclear science





# R&D in Partitioning and Transmutation in FP7

- **Objective**

- Investigate ways of reducing the amount and/or hazard of the waste by P & T or other techniques

- **Activities**

- RTD in all areas of P&T to develop pilot facilities for the most advanced partitioning processes and transmutation technologies involving sub-critical and critical systems.
- Explore the potential of concepts that produce less waste in nuclear energy generation including the more efficient use of fissile material in existing reactors.





# Cross-cutting Activities

## Infrastructures

- **objective:** To support the availability of, and cooperation between, research infrastructures necessary to maintain high standards of technical achievement, innovation and safety in the European nuclear sector
- **Activities:** Pilot/test facilities for P & T

## Human resources and training

- **objective:** To support the retention and further development of scientific competence and human capacity in order to guarantee the availability of suitably qualified researchers and employees in the nuclear sector over the long term.
- **Activities:** Training and mobility of researchers



# EURATOM FP6 P&T Projects Underway

SN	Acronym	Title	Budget (M€)		Coordinator
			Total	EC	
1	<b>PATEROS</b>	P&T European Road-map	<b>0.8</b>	<b>0.6</b>	SCK/CEN (BE)
2	<b>RED-IMPACT</b>	Impact study of P&T on Waste management	<b>3.9</b>	<b>2.0</b>	KTH (SE)
3	<b>EURO-PART</b>	Partitioning techniques and processes	<b>11.2</b>	<b>6.0</b>	CEA (FR)
4	<b>EURO-TRANS</b>	All Aspects of Transmutation by sub-critical ADS	<b>45.0</b>	<b>23.0</b>	FZK (DE)
5	<b>ELSY</b>	Waste transmutation in Lead Cooled critical system	<b>6.9</b>	<b>2.95</b>	ANSALDO (IT)
6	<b>PUMA</b>	Pu and MA Management by thermal Gas-cooled system	<b>3.7</b>	<b>1.85</b>	NRG (NL)
7	<b>VELLA</b>	Networking of lead loop infrastructures in Europe	<b>3.3</b>	<b>2.3</b>	ENEA (IT)
8	<b>LWR-DEPUTY</b>	LWR fuels for deep burning of Pu in thermal systems	<b>2.4</b>	<b>1.25</b>	SCK/CEN (BE)
9	<b>EFNUDAT</b>	Networking of EU facilities for nuclear data measurements	<b>3.0</b>	<b>2.4</b>	CNRS (FR)
10	<b>CANDIDE</b>	Networking of Nuclear data for EU Industrial Development	<b>0.8</b>	<b>0.8</b>	JU (SE)
11	<b>NUDAME</b>	Trans-national access for nuclear data measurements	<b>0.2</b>	<b>0.2</b>	EC-JRC (IRMM)
		<b>Totals</b>	<b>81.0</b>	<b>43.5</b>	



# Euratom Interest in collaboration of ISTC Partitioning Projects

(For Transmutation projects , see another presentation)

- **Experimental study on Critical issues of nuclear Energy Systems employing Liquid Salt Fluorides: Continuation of ISTC 1606 . Kurchatove Institute (V. Ignatiev).**
- **Partitioning of fissile and radiotoxic materials from spent nuclear fuel (phase II of ISTC 3261) RIAR (M. Kormilitsyn).**
- **Diamides of Dipicolinic Acid as Actinide Extractant, Khlopin Radium Institute (V. Babain) ISTC # ?**

