



JRC Newsletter

EUROPEAN COMMISSION

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Welcome to the first edition of the JRC Newsletter. The purpose of this new monthly publication from the Joint Research Centre is to provide our customers, stakeholders and staff, along with anyone interested in who we are and what we do, with a selection of recent highlights from our scientific achievements,

support to European policy making, contributions to scientific events and other news of interest. We hope that this initiative will contribute both to an increasing awareness of the JRC and greater understanding of our very special role in providing science and technology advice to policy makers and our customers in general.

The following pages should serve as a short demonstration of the breadth and depth of our expertise and accomplishments, both to those unfamiliar with the work of our organisation and to the many with whom we already collaborate. At the same time, they will also allow JRC staff, spread as they are across seven institutes in five European countries, to keep up with what's happening throughout the organisation. And to add a wider perspective, I will ask some of our customers and partners to share their views on co-operating with the JRC through contributions to this newsletter.

Highlights this month are appropriately diverse, with news of several JRC reports published in support of European policy making: on the impact of climate change and the challenges it represents for Europe, on the increased investment by EU companies in industrial Research and Development and on



JRC Reference report: Impact of Europe's changing climate

current approaches to investigating potential health effects of Genetically Modified Organisms.

I am particularly proud to announce this month the positive assessment by an independent review panel, led by former UK Chief Scientific Adviser Sir David King, of the JRC's work between 2002 and 2006 under the Sixth Framework Programme for Research (FP6). The group's report contains a number of concrete recommendations which will help the JRC's strategic orientation in the coming years.

We also have news of scientific results on a new analytical tool for GMO detection, low-level activity of polonium and uranium in drinking waters and an award nomination for bladder cancer treatment.

I hope you will enjoy the read. As our new newsletter is an information tool that can and should evolve to suit your needs, our communications team would very much appreciate your comments and feedback. Please don't hesitate to send them your suggestions at jrc-info@ec.europa.eu

ROLAND SCHENKEL
Director General

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Assessing the Impact of climate change and the challenge for Europe

The JRC, in collaboration with the European Environment Agency (EEA) and the World Health Organization (WHO), released a Reference Report entitled *Impacts of Europe's Changing Climate* on 29th September. The indicator-based assessment addresses the



Agriculture is one of the sectors that will be significantly affected by climate change

effects of global climate change on the environment and on human activities, highlighting impacts on the most vulnerable areas in Europe.

The key message of the report, which has attracted considerable media attention in recent weeks, is that all natural and societal sectors are vulnerable to the effects of climate change. The projected impacts of the phenomenon based on current scientific understanding are sufficiently serious to call for immediate action from European decision makers, both in terms of adaptation to the changing climate and the reduction of greenhouse gas emissions.

The report notes increasing temperatures, changing precipitation, rising sea levels, more intense and frequent extreme weather events and melting glaciers and ice sheets as some of the challenges for Europe already to have been triggered by global climate change.

The report also includes the following findings:

- While European policies to reduce air pollution are proving effective in reducing the emissions, concentrations of ground-based ozone precursors are decreasing less rapidly than expected due to regional warming in Europe;
- Agricultural crop yields in Europe

have been significantly affected by extreme weather events such as the summer heat wave of 2003 and the spring drought of 2007. The increased need for water in the agricultural sector will lead to competition for this resource with other sectors;

- Higher temperatures and more extreme precipitation will lead to a deterioration of soil organic carbon stocks and may lead to a substantial increase in carbon dioxide emissions from the soil carbon pool;
- In much of continental Europe, the majority of forests are now growing faster than in the early 20th century. A changing climate will favour certain species in some forest locations, while making conditions worse for others, leading to substantial shifts in the distribution of vegetation. Periods of drought and warm winters are increasing levels of pests and

further influencing forest health;

- In a warmer climate, risk of fire will increase and, as a consequence, a greater area is likely to be burned with longer “fire seasons”.

Frank Raes and Carlo Lavalle of the JRC Institute for Environment and Sustainability (IES) co-ordinated the input of about 25 colleagues from three JRC institutes; the IES, the Institute for Prospective Technological Studies (IPTS) and the Institute for the Protection and Security of the Citizen (IPSC).

The Reference Report gives an overview of climate change impacts as well as indications on how Europe should adapt itself to these impacts. As such, it will be a reference for governments and institutions that need to develop adaptation strategies. It will form the basis for a Commission White Paper on “Adapting to Climate Change – Towards a European framework for action”, due for release in Autumn 2008. It shows the need for more continuous observations, better climate predictions on a regional scale and the need to list and exchange best practices in adaptation.

http://www.jrc.ec.europa.eu/downloads/jrc_reference_report_2008_09_climate_change.pdf



More intense and frequent extreme weather events are among the challenges for Europe

The 2008 EU R&D Industrial Investment Scoreboard

The 2008 EU R&D Industrial Investment Scoreboard is now available. On an annual basis and for comparable companies, R&D investment by EU companies has increased by 8.8% according to the report, published 15th October. This compares to an increase of 8.6% in investment by American companies, putting Europe ahead for the first time in five years.

Three EU companies feature in the top ten: Nokia in 5th place, Volkswagen in 9th and Daimler in 10th. The world's biggest investor in R&D in 2008 is Microsoft.

“We are pleased that R&D investment growth in EU companies

has increased, against the background of a slight fall in the growth rate worldwide”, said European Science and Research Commissioner Janez Potočnik. “In particular, companies in the energy field are rapidly increasing their R&D investments, responding to the need to make more efficient use of



Monitoring industrial research

limited resources. However, private sector R&D in Europe remains at 1% of GDP, amidst signs that EU companies are making an increasing share of their R&D investments outside Europe. Therefore, we must continue our efforts to make Europe a more attractive place for business R&D, notably by creating a truly European Research Area, in order to reach the Lisbon objectives.”

Part of the Industrial Research Investment Monitoring activity carried out jointly by the JRC and the Commission's Research Directorate-General, the scoreboard is the fruit of research conducted by the JRC Institute for Prospective Technological Studies (IPTS).

<http://iri.jrc.ec.europa.eu/>

Financial crisis: Revising EU rules on deposit guarantees

The European Commission has put forward a revision of EU rules on deposit protection that puts into action commitments made at the last EU Finance Ministers meeting on 7th October. The new rules are designed to improve depositor protection and to maintain the confidence of depositors in the financial safety net and the proposals are based in part on research carried out by the JRC Institute for the Protection and Security of the Citizen (IPSC).

The Econometrics and Applied Statistics Unit at IPSC, aided by the European Forum of Deposit Insurers (EFDI), was tasked earlier this year with investigating the efficiency

of Europe's deposit guarantee schemes under the Deposit Guarantee Schemes Directive (1994/19/EC) and highlighted points to be addressed to further reinforce the level of protection.

The JRC study showed that the EU's own safety net has been efficient in repaying depositors: in cases of bank failures, 90% of deposits have been reimbursed within the current three month deadline enforced by EU legislation.

In light of the current situation, the minimum level of coverage for deposits will now be increased within one year from €20,000 to €100,000, and initially to €50,000 for the intervening period. The time allowed for the deposit guarantee schemes to pay depositors in case

of bank failure will be reduced from 3 months to 3 days.



Guaranteeing the safety of deposits in Europe

Previous JRC technical reports in the area of deposit guarantees have examined levels of coverage (2005) and possible harmonisation of funding mechanisms (2006/7). All are available online.

<http://finecon.jrc.ec.europa.eu/>

Melamine contamination: JRC reviews detection methods

As part of the rapid response to the melamine food crisis in China, the JRC Institute for Reference Materials and Measurements (IRMM) has set-up a website to

gather information and review methods to detect melamine in food and animal-feed products.

The recent health scare in China over tainted milk powder has raised concerns about possible melamine contamination in

products on the European market. Although the EU does not import milk or other dairy products from China, processed foods such as biscuits and chocolates might have traces of milk powder. The European Commission recently decided that all products originat-



How to best trace melamine in processed foods?

ing from China and containing more than 15% of milk as an ingredient must be checked for the presence of melamine. In order to protect the European citizen, products containing more than 2.5 mg / kg of melamine are to be destroyed immediately.

In cooperation with the Commission's Directorate General for Health and Consumers, the JRC is reviewing

methods for detecting melamine in food and feed. Experts in the field are invited to contribute to this initial phase of information gathering by consulting the website set up by the IRMM. The website was launched on 10th October.

<http://irmm.jrc.ec.europa.eu/html/activities/melamine/index.htm>

Supporting the EU's Emergency and Crisis Coordination Arrangements

A Europe-wide exercise for the EU's Emergency and Crisis Coordination Arrangements (CCA), between the European Commission, the Council and Member States was conducted at the end of September to test the response capacity of the European Institutions to a major natural disaster.

The JRC Institute for the Protection and Security of the Citizen (IPSC) contributed to the preparation and execution of the exercise through its actions "Crisis Monitoring and Response Technologies" (CRITECH) and "Web Mining and Intelligence" (EMM), as well as its European Laboratory for Structural Assessment (ELSA). Establishing the impact of a fictitious scenario based on twin storms, the IPSC created (fictitious) news alerts and preparatory information similar to the Tropical Cyclone reports of its Global Disaster Alert and Coordination System. The JRC also played an active role during the exercise with map-based situation reports, the automatic transfer of maps and interactive analysis to the Commission's information system for crisis management, and the sharing of crisis relevant information with EU Member States through a separate online platform also developed by the JRC for the Council of Ministers.

<http://ipsc.jrc.ec.europa.eu/showaction.php?id=15>
<http://ipsc.jrc.ec.europa.eu/showaction.php?id=18>

IES: Forest Fires in Europe 2007 report published

2007 has been one of the worst years on record for forest fire damage in Europe, according to the annual report on the phenomenon published mid-September by the JRC Institute for Environment



Forest Fires in Europe 2007

and Sustainability (IES) in collaboration with Member States and neighbouring countries. Nearly one million hectares of European land burned in 2007, with ninety deaths reportedly resulting from the fires. Fires struck the south-eastern European region for the most part, causing unprecedented damage in Greece, Italy, and the Balkans. The report, along with additional information on forest fires in Europe, is available on the web site of the European Forest Fire Information System (EFFIS).

<http://effis.jrc.ec.europa.eu/reports/fire-reports>

How to reduce the environmental impact of residential buildings

The JRC Institute for Prospective Technological Studies (IPTS) contributed to the European Commission's Integrated Product Policy in September with a report on the project *Environmental improvement potential of residential buildings*. The Integrated Product Policy seeks to minimise the environmental degradation caused throughout the life cycle of products such as buildings by looking at all phases of a product's life-cycle and taking action where it is most effective.

The JRC report presents a systematic overview of the environmental life cycle impacts of residential buildings in the EU-25 and also provides an analysis of the technical improvement options that could help to reduce these environmental impacts, with a special focus on their main source, namely energy use for heating. The report assesses the environmental benefits and the costs associated with the various options for improvement.

<http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=1744>.

Study on health effects of GMO food and animal feed

The JRC Institute for Health and Consumer Protection (IHCP) released a study on 10th September

entitled *Scientific and technical contribution to the development of an overall health strategy in the area of GMOs*. Carried out at the request of the European Parliament and in cooperation with the European Food Safety Authority (EFSA) and with input from a panel of twenty international experts, the study assesses the current situation in terms of scientific knowledge in

this field and addresses areas for possible improvement.

The study found that there is a comprehensive body of knowledge that already adequately addresses current food safety issues including those dealing with GM products and that it is considered by the experts as sufficient to assess the safety of present GM products. Its compila-

tion also involved research which has led to the development of a new, ready-to-use analytical system for the simultaneous detection of all EU approved and non-approved GMOs known to the European Commission (see also article further down on this page).

http://www.jrc.ec.europa.eu/downloads/jrc_20080910_gmo_study_en.pdf

SCIENTIFIC RESULTS

Nuclear Medicine: JRC alpha-immunotherapy treatment for cancer of the bladder nominated for Marie-Curie Award

A joint project involving JRC scientists F. Bruchertseifer and A. Morgenstern of the JRC Institute for Transuranium Elements (ITU) in Karlsruhe and collaborators from the Nuclear Medicine Department of Klinikum Rechts der Isar (KRDl) in Munich has been nominated for the Marie Curie Award of the European Association of Nuclear Medicine.

The ITU scientists are part of the Alpha-immunotherapy group in Karlsruhe and the award nomination is for their work on treating bladder carcinoma (a form of malignant cancer arising from epithelial cells and liable to spread to other parts of the body) in tests on mice using alpha-radio immunotherapy with the Bismuth-213 radioisotope.



ITU scientists Frank Bruchertseifer (front) and Alfred Morgenstern

Bladder carcinoma is a very common urological tumor, responsible for 3.5% of cancer deaths in Europe. Therapy studies using Bi-213 has shown excellent response rates and drastically increased survival of treated animals compared to those

that received no treatment for the cancer. The results obtained in the JRC study should lead to clinical tests for this form of “nuclear medicine” on humans.

<http://itu.jrc.ec.europa.eu/index.php?id=202>

Analytical system for detection of authorised and non-authorised GMOs

The JRC Institute for Health and Consumer Protection (IHCP) has developed a real-time PCR based ready-to-use multi-target analytical system for the detection of EU authorised and non-authorised GM events. The system was established upon specific request of the European Parliament in the context of the project *Scientific and technical contribution to the devel-*

opment of an overall health strategy in the area of GMOs.

The approach allows the event-specific simultaneous detection of 39 single-insert GMOs, comprising all EU authorised and all non-authorised GM events for which a method was submitted to the Community Reference Laboratory for GM Food and Feed (CRL-GMFF) and stacked events derived from them. System performance (specificity, efficiency etc) has been successfully confirmed by experimental testing

conducted within the CRL-GMFF. The system developed by IHCP is the first analytical tool developed worldwide allowing the detection of so many GM events simultaneously using event-specific targets. Moreover, the adoption of such a tool by control laboratories and its integration within laboratories' working routines may constitute a significant step towards a higher level of harmonisation at the global level.

<http://bgmo.jrc.ec.europa.eu/>

Measuring low-level activity of polonium and uranium in drinking waters

A new radiochemical method using alpha-particle spectrometry for the sequential determination of low activity levels of polonium and uranium in water was developed by scientists from the JRC Institute for Reference Materials and

Measurements (IRMM). This is of particular importance with a view to the near-future refinement of the European legislation on the quality of drinking water which will define reference values for more individual radionuclides than at present and will require several radioactivity parameters to be monitored.

Determination of Polonium-210 in

water, food and in bioassay samples requires special attention due to its short half-life of 138 days and its high radiotoxicity, leading to risks of internal doses from alpha emission after ingestion. With the new method, a detection limit of 0.1 mBq/L was obtained.

<http://irmm.jrc.ec.europa.eu>

RECENT AND FORTHCOMING EVENTS

JRC presents social computing to enhance lifelong learning

Futuroscope Chasseneuil, France, 18th-19th September

As part of the French EU Presidency event *Lifelong learning in higher education: networked teaching and learning in a knowledge society*, the JRC Institute for Prospective Technological Studies (IPTS) gave a presentation entitled *Learning 2.0 – the use of social computing to enhance lifelong learning*. IPTS is currently conducting a research project on the impact of web 2.0 innovations on education and training, in collaboration with the European Commission’s Directorate General for Education and Culture.

The presentation was based on the intermediate results of the study, focusing on the usage, opportunities and challenges of web 2.0 approaches in higher education. The study concentrates on analysing to what extent “Learning 2.0” supports inclusion and innovative learning practices, promotes lifelong learning, and changes learning patterns and trajectories.

<http://is.jrc.ec.europa.eu/pages/EAP/eS.html>



JRC opens the world’s largest conference on photovoltaic solar energy

Valencia, Spain, 1st-5th September

Giovanni De Santi, Director of the JRC Institute for Energy (IE),

opened the 23rd European Photovoltaic Solar Energy Conference and Exhibition in Valencia, Spain, on 1st September. The event,



IE Director Giovanni de Santi opening the conference

attended by more than 4000 participants, covered all aspects of photovoltaic (PV) solar energy, from basic research and manufacturing technology to finance employment and the policy context. The JRC’s Renewable Energies Unit has held the position of Technical Programme Chair of this conference for 14 years. Discussions covered the PV industry initiative as part of the European Commission’s Strategic Energy Technology (SET) Plan, adopted by leading companies of this dynamic industry with growth rates exceeding 50% per year.



JRC at the 3rd European Security Research Conference

Paris, France, 29th-30th September

Organised under the French Presidency of the European Union, the Third European Security Research Conference (SRC’08) was held in Paris on 29th and 30th September. The objective of SRC’08 was

to demonstrate the concrete implications of security research for citizens while stressing the need to provide research and innovation-based responses to security concerns. More than a thousand research and industry representatives working in the field of security attended the event.

The JRC Institute for the Protection and Security of the Citizen (IPSC) contributed to the conference with a presentation from its Director Stephan Lechner on the JRC’s activities in the area of security research. Alois Sieber, Head of IPSC’s “Sensors, Radar technologies and Cybersecurity” Unit chaired two roundtables.

<http://ipsc.jrc.ec.europa.eu>



EU-Russia Eurocodes Workshop

Moscow, Russia, 9th-10th October

The JRC Institute for the Protection and Security of the Citizen (IPSC) co-organised an EU-Russia workshop on standardisation for the construction industry in Moscow, 9th-10th October. The event explored possibilities for co-operation between the EU and Russia on reducing divergences in construction standards and achieving better building design in terms of safety and security.

The meeting was the first of its kind on standardisation in the construction sector between the EU and Russian authorities.

The JRC plays an important role in European construction standards harmonisation and in the

promotion of Eurocodes, a series of 10 European Standards, (EN 1990 - EN 1999) that provide a common approach to the design of buildings and civil engineering and construction products. The standards are a



Red Square, Moscow

means of assuring conformity with the essential requirements of the Construction Products Directive on works and products bearing the “CE” marking. They are also the preferred reference for technical specifications in public contracts. Through its European Laboratory for

Structural Assessment (ELSA), the IPSC provides crucial construction-related research, performing vulnerability assessment on buildings and civil infrastructures for risk mitigation.

<http://ipsc.jrc.ec.europa.eu/facility.php?id=elsa>

UPCOMING

JRC Round Table in Bulgaria Sofia, 18th November

The JRC and the Bulgarian Ministry for Education and Research are jointly organising a Round Table in Sofia on 18 November 2008. The Round Table is part of a cycle of similar events being organised in the European Union’s New Member States and which have already taken place in the EU-10 countries. Three themes of priority for Bulgarian research have been chosen for discussion:

- Natural hazards, climate change and energy;
- Food and chemical safety, Metrology and GMOs;
- Nuclear safety and security.



JRC Information Day in France Montpellier, 12th December

The JRC will host an Information event on 11 December 2008 entitled *A European contribution to low carbon energy research - A special focus on the activities of the European Commission’s Joint Research Centre (JRC)*.

The event will be held during the ENERGAIA International Renewable Energies Exhibition and Conference in Montpellier which runs from 10 to 12 December 2008. The JRC will also have a stand in the exhibition. <http://www.jrc.ec.europa.eu/infoday-france-2008>

OTHER NEWS

JRC 2002-2006: Positive assessment from independent review panel led by Sir David King

A panel of 14 international experts led by Sir David King, former Chief Scientific Adviser to the UK Government, has completed an in-depth ex-post review of work carried out by the Joint Research Centre from 2002 - 2006 under the Sixth Framework Programme for Research (FP6). Success factors identified in the report include the continued provision of service to the European Commission without compromising scientific vitality or integrity; increased focus on thematic areas of priority; increased networking activity; enhanced researcher training and key assistance given to Candidate Countries in the final steps of the EU accession process.

The report notes that “the JRC has undergone a major transformation over the last 10 years, consolidating its position as an indispensable source of knowledge and expertise

in support of the political agenda of the EU”.

Sir David King stated that a “detailed assessment of the work carried out during FP6 convinced the Panel of the good, very good and sometimes excellent quality”.

Commenting on the report, European Commissioner for Research Janez Potočnik said “it shows that the JRC is going in the good direction”.

<http://www.jrc.ec.europa.eu>



JRC in FP6: a detailed review

JRC-IRMM and NIST strengthen their collaboration

On 4th and 5th September the JRC Institute for Reference Materials and Measurements (IRMM) welcomed leading US scientists from the National Institute of Standards and Technology (NIST). The event was the latest in a series of coordination meetings held every two years with discussions focusing on research and development programmes in metrology.

Topics under discussion included food contaminants and nutrients, biofuels, standards for genomics and proteomics as well as joint activities within international organisations.

<http://irmm.jrc.ec.europa.eu>

**Excellence in management:
5 star certification for JRC-ITU**

The JRC Institute for Transuranium Elements (ITU) Integrated Management Systems (IMS) has been awarded the IQNet “5 stars for excellence” certification.

The award is a recognition of the stringent quality control system implemented by the Institute, incorporating a management approach that applies Quality Management System (ISO 9001), Environmental Management (ISO 14001) and Occupational Health and Safety Standards (OHSAS) to satisfy the needs of JRC-ITU as well as those of its stakeholders.

The achievement of the “Recognised for Excellence” 5 stars in the EFQM model came about through external

evaluation by an experienced team of practicing managers and represents a milestone in the

continuous improvement in the overall quality of ITU’s work.
<http://itu.jrc.ec.europa.eu>



Institute for Transuranium Elements, Karlsruhe (D)

The JRC Newsletter is a monthly publication intended to provide JRC customers, stakeholders and other interested parties with an overview of recent highlights from the JRC’s scientific achievements, policy support, contributions to events and other news.

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The mission of the JRC is to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies. As a service of the European Commission, the JRC functions as a reference centre of science and technology for the Union. Close to the policy-making process, it serves the common interest of the Member States, while being independent of special interests, whether private or national.