

Co-funded by the



# CEBAMA

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## Deliverable n°D4.16

### Press Release

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Duration: 48 Months

**Project co-funded by the European Commission under the Euratom Research and Training Programme on Nuclear Energy within the Horizon 2020 Framework Programme**

#### Dissemination Level

<b>PU</b>	Public	x
<b>PP</b>	Restricted to other programme participants (including the Commission Services)	
<b>RE</b>	Restricted to a group specified by the partners of the CEBAMA project	
<b>CO</b>	Confidential, only for partners of the CEBAMA project	

This deliverable aims on reporting the dissemination of the project as a press release. At the end of the project, the Cebama overview was prepared and distributed to all ExCom members in order to release the press in their news section.

The text and the images included in the press release are presented below.

### **Cementitious materials as engineered/technical barrier in Nuclear Waste Disposal**

The collaborative project Cement-based materials, properties, evolution, barrier functions (CEBAMA) is an innovation action granted by the European Commission (EC), within the HORIZON2020 programme, contributing to the development of options for the safe management of radioactive waste. The project specially supports the implementation-oriented research for of the first-of-the-kind geological repositories, in line with the Implementing Geological Disposal – Technology Platform (IGD-TP) (<https://igdtp.eu/>) vision of having the first geological disposal facilities operating safely in Europe by 2025. The 4-year project started the 1st of June 2015 and lasted until 31<sup>st</sup> May 2019. It was carried out by a consortium of 27 partners consisting of large Research Institutions, Universities, one Technical and Scientific Support organization (TSO), and one small-medium enterprise (SME) from 9 EURATOM Signatory States, Switzerland and Japan. IGD-TP and National Waste Management Organizations supported CEBAMA, for instance by co-developing the work plan, participating in the End-User Group, granting co-funding to some beneficiaries, and providing for knowledge and information transfer.

In view of the implementation and safe future operation of nuclear waste repositories, remaining key technical and scientific topics of common interest are addressed. One of these issues is related to the better understanding of cement-based materials properties which are key components in the multi-barrier system of a nuclear waste repository. For example, cementitious materials are used to encapsulate the nuclear waste, and are foreseen as liners and structural components as well as sealing materials. For this reason, the materials and their behaviour has to be addressed in the Safety Case for each repository.

The overall strategic objective of CEBAMA was to support the implementation of geological disposal by significantly improving the knowledge base for the Safety Case for European repository concepts. The ambition of this project was the development of a comprehensive model for predicting the transport characteristics such as porosity, permeability and diffusion parameters of cement-based materials in contact with the engineered and natural barriers of repositories in crystalline and argillaceous host rocks. Dedicated studies on radionuclide retention processes and on the impact of chemical alterations on these processes were part of this advanced approach.

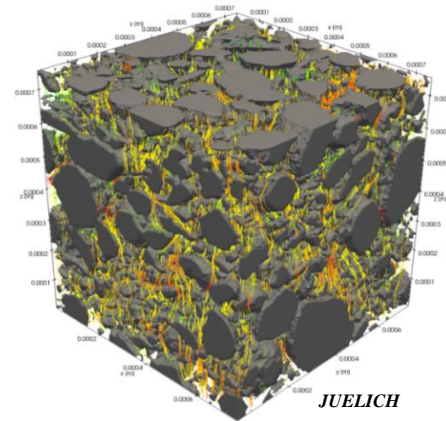
R&D in CEBAMA was largely independent of specific disposal concepts and addressed different types of host rocks, as well as bentonite. CEBAMA did not focus on one specific cementitious material but studied a variety of representative cement-based materials for Nuclear Waste Storage in order to provide insight on general processes and phenomena which can then be transferred to different applications and national and international projects.

Specific objectives and research activities of CEBAMA are summarized as follows:

- Experimental studies analysing interface processes between cement-based materials and host rocks (crystalline rock, Boom Clay, Opalinus Clay (OPA), Callovo-Oxfordian (COX), Toarcian mudstone, Borrowdale Volcanic Group) or bentonite backfill, and assessing the impact on physical properties.

- Investigation of radionuclide retention and migration processes in high pH concrete environments, focusing on radionuclides which have high priority from the scientific and applied perspective.
- Improved validity of numerical models to predict changes in transport processes as a result of chemical degradation, including advanced data interpretation and process modelling.

More information of the project, including key deliverables and a list of publications is available at the project website ([www.cebama.eu](http://www.cebama.eu)).



This press has been published in the organization webpages of the ExCom members and two examples are presented in the following pages (Figure 1 and Figure 2).





KIT  
Karlsruher Institut für Technologie



INE  
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2019
2018
2017
2016
2015
2014
2013
2012 and earlier

### HORIZON2020 project CEBAMA (2015-2019)

**Cementitious materials as engineered/technical barrier in Nuclear Waste Disposal**



Investigation of radionuclide retention and migration processes in concrete.

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**Figure 1:** Screenshot of the main page of KIT-INE where Cebama appears in “News & Highlights” section (top) and of the complete press release of the Cebama project published in the KIT-INE webpage (bottom, link: <http://www.ine.kit.edu/54.php?tab981=1481#block1537>).

## Noticias



### EL PASADO DÍA 9 DE JUNIO CELEBRAMOS NUESTRO 25 ANIVERSARIO!!!!

25 años de equipo trabajando al lado de nuestros clientes y colaboradores. Fue una velada emocionante e inolvidable durante la cual pudimos disfrutar la compañía de todo el equipo de Amphos21 en Barcelona, y algunos representantes de Amphos21 Chile y de Amphos21 Perú. Es un orgullo de equipo!! Tuvimos también la suerte de contar con la presencia de muchos clientes y colaboradores. Muchas gracias por vuestro acompañamiento a lo largo de estos 25 años. Por los próximos 25! Amphos21, BREAKING THROUGH! Gracias



### Cementitious materials as engineered/technical barrier in Nuclear Waste Disposal

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### Amphos 21 participó en los workshops ABC-Salt (VI) y HITAC (III) en Karlsruhe (Alemania).

Amphos 21 has participated in the ABC-Salt (VI) and HITAC (III) workshops in Karlsruhe (Germany). The ABC-Salt (Actinide Brine Chemistry in a Salt-Based Repository) addresses

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### Amphos 21 participó en el Congreso Internacional ISMAR10 celebrado los pasados días 20-24 en Madrid

Amphos 21 presentó dos proyectos de Recarga gestionada en el Congreso Internacional ISMAR10 celebrado los pasados días 20-24 en Madrid <https://www.ismar10.net/en/ismar10-3/>. Por un lado, Jordi

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The screenshot shows the Amphos21 website with a navigation bar at the top containing 'Trabaja con nosotros', 'Contacto', 'Intranet', and a Spanish flag. The main header features the 'AMPHOS 21' logo and a menu with 'HOME', 'AMPHOS 21', 'SECTORES', 'RECURSOS', 'I+D+I', 'MODELLING', and 'TRAINING'. The main content area displays the title 'Cementitious materials as engineered/technical barrier in Nuclear Waste Disposal' and the beginning of a press release text.

**Figure 2:** Screenshot of the main page of Amphos21 where Cebama appears in “Noticias” section (top) and of the complete press release of the Cebama project published in the Amphos21 webpage (bottom, link: <https://www.amphos21.com/cementitious-materials-as-engineered-technical-barrier-in-nuclear-waste-disposal/>)