



**vüje**



## About VINCO Project

VINCO project represents the next stage of capacity building in nuclear technologies in Central European countries. Participating countries defined already their specializations: helium technology in Czech Republic, design and safety analyses in Slovakia, fuel studies in Hungary and material research in Poland. Having such expertise, the joint development of Gen IV nuclear technologies with the special emphasis on gas-cooled reactors is fully possible.

Thus, the main objectives of the regional VINCO project are:

- (i) development of the principles of cooperation and rules of access to existing and planned infrastructure,
- (ii) identification of the specific objectives of the R&D activities in the cooperating countries,
- (iii) description and analysis of the existing research, training and educational equipment and capabilities,
- (iv) determination of the investment priorities in cooperating countries and
- (v) setting up of joint research, educational and training projects. It is expected that the joint activities will result in coordination of actions allowing to obtain financing from the Structural Funds available for the Visegrad countries. These funds would allow for a huge increase of mass and modernization of the research potential in the region.

## ALLEGRO Workshop

Author: B. Hatala [VUJE, a. s.]

ALLEGRO Seminar „Slovak National Project Results“ was held on March 21, 2016 in Budapest. The Slovak national research project “ALLEGRO Research Centre” oriented on GFR reactor development was launched in Slovak Republic in 2014. In the framework of the project demonstration reactor “ALLEGRO - CEA concept 2009” was reanalysed.

In the first part of the seminar the principles of defence in depth were introduced and systematic application on ALLEGRO reactor was proposed.

In the field of thermal-hydraulics selected analyses performed by REPLA5 and CATHARE codes and model development for RELAP5 code were presented.

The presented neutronic analyses were oriented on criticality problems, overall characterisation

of neutronic features and core properties. Optimisation of reactivity control system and adaptation of suitable dynamic macrocode for ALLEGRO core calculations were conducted as well. Well known codes SERPENT, SCALE, HELIOS and DYN3D-MG with various cross section libraries were utilised at the calculations. ALLEGRO breeding resp. transmutation properties were evaluated and improved by partial replacement of PuO<sub>2</sub> by UO<sub>2</sub> resp. by strictly heterogeneous configuration of the core.

The presented analyses of accidents with fuel damage were focussed on specifics of severe accidents, identification of appropriate codes to simulate such events up to development of initial version of the model of ALLEGRO facility.

## **ESNII Task Force meeting no.20**

Author: L. Belovsky [UJV Rez, a. s.]

The 20th meeting of the European Sustainable Nuclear Industrial Initiative Task Force (ESNII TF) was held in Brussels on 20 January 2016. It was chaired by Mr Noel Camarcat. The main purpose of the meeting was to inform the chairman about the progress of the ESNII projects: ASTRID, MYRRHA, ALFRED and ALLEGRO. Mr. Belovsky (UJV) provided with general overview of the ALLEGRO programme progress and (VUJE) presented detail of the outcomes summed up in a number of technical reports. The next Task Force meeting will be held in London on the 15/6/2016

## **MatISSE/JPNM workshop on cross-cutting issues in structural materials**

Author: J. Kalivodova [Centrum vyzkumu Rez s.r.o.]

MatISSE/JPNM workshop on cross-cutting issues in structural materials R&D for future energy systems took place in Institute for Energy and Transport, Petten, The Netherlands, on 25, 26 November 2015. The purpose of this Workshop was to discuss the status of structural materials R&D for future energy systems and particularly to identify common topics and sharing knowledge between different technologies such as renewables (wind, photovoltaics, etc.), nuclear and “clean” fossil fuel technologies. The collaboration on materials qualification and development across low carbon energy technologies on cross-cutting issues is a way to accelerate the energy system transformation towards the highest possible standards of safety, cost reduction and increased efficiency.

Two-day workshop addressed four main cross-cutting issues, High temperature applications, Compatibility with liquid metals, Design Codes, Advanced steels. During the workshop more than 23 oral presentation have been presented to more than 70 participants. Among others also a topic of structural materials for GFR-ALLEGRO has been addressed in the presentation Candidate materials for GFR concept ALLEGRO and R&D related activities.