Press release

The nuclear research institutes of the Visegrád-4 (V4) region (ÚJV, Řež, Czech Republic, MTA EK, Budapest, Hungary, NCBJ, Świerk, Poland and VUJE, a.s., Trnava, Slovakia) agreed to establish the V4G4 Centre of Excellence for performing joint research, development and innovation in the field of Generation-4 (G4) nuclear reactors. The new association V4G4 Centre of Excellence was introduced to the public at the Hungarian Academy of Sciences on July 18, 2013.

In March 2007, the European Union stated the well known "3x20 objectives" for 2020. More recently, the EC proposed a new objective, the “Energy Roadmap 2050”, with more ambitious targets regarding decarbonisation of the EU economy. All studied scenarios in the frame of this roadmap include a strong improvement of energy efficiency, an increase of renewable energy sources, a decrease of fossil fuels, and a contribution of the nuclear at various range (up to 21%) depending on several hypothesis.

To decrease this dependence on fossil fuels, several countries, among them the V4 countries, have decided to build their energy mix on nuclear and renewable, with a reduction of the use of fossil fuels as soon as possible.

The support of the current fleet and more particularly the extension of their life operation with the highest level of safety remains the first priority for nuclear research organizations like the 4 founding members of the V4G4 Center of Excellence. To prepare the future, their main objective is the development of the 4^{th} generation of nuclear reactors based on fast neutrons. This new generation of nuclear reactors will meet the objective of a sustainable nuclear energy, based on the highest safety standards. Indeed, such reactors will enable:

- minimization of the volume of radioactive waste and, through the transmutation of minor actinides, reduction of their radiotoxicity to that of the uranium ore in about 3 centuries, compared to 100 000 years with the current nuclear reactors;
- uranium resource saving, through breeding, which multiply by a factor of about 50 the energy production from a given amount of uranium fuel, offering resources to several thousands years;
- non-proliferation thanks to adequate advanced recycling processes.

Thanks to the development of existing experimental facilities in their organizations and construction of new ones, the V4G4 Center of Excellence aims at:

- investigating crucial aspects, in particular regarding safety, and generating experimental results for the development of Generation 4 nuclear reactors, especially for the innovative concept GFR (Gas Cooled Fast Reactors) for which a demonstrator, ALLEGRO, will be built and operate in the V4 region in the 2020’s;
- promoting and popularizing the potential, perspectives, technical, political and environmental issues related to Generation 4 nuclear reactors;
- contributing to the preservation of nuclear qualifications by involving young scientists and engineers into its challenging research and development activities,
- facilitating the integration of nuclear research in Central Europe.

To reach these objectives, the V4G4 could rely on the scientific support from the French CEA, which has the largest experience in fast reactors throughout the world and has developed, first, the concept of GFR.

In the next decades the ALLEGRO project and the V4G4 Centre of Excellence will be a cohesion force for leading edge research and technology in this region and will provide an excellent opportunity for industries of high added value.