

## **SAMOFAR: The way forward to the ultimate safe nuclear reactor**

The Molten Salt Fast Reactor is the only reactor that can efficiently consume thorium and process existing plutonium stocks as well. The fuel is dissolved in a molten fluoride salt that simultaneously serves as a coolant. By using thorium, the production of plutonium is reduced by a factor of one thousand which moreover remains circulating in the salt solution until it has been completely fissioned. This can reduce the required storage time of nuclear waste from 200,000 to less than 500 years.

### **Cooperation of leading institutes in Europe and beyond**

SAMOFAR – Safety Assessment of the Molten Salt Fast Reactor – is a 5M€ project of the European Union research program Horizon 2020. The project consortium consists of 11 partners (*CNRS, JRC, CIRTEN, IRSN, CINVESTAV, AREVA, CEA, EDF, PSI, KIT and TU Delft*) exploiting each other's unique expertise and infrastructure in the 4-year research programme. The grand objective of SAMOFAR is to prove the innovative safety concepts of the MSFR by advanced experimental and numerical techniques, to deliver a breakthrough in nuclear safety and optimal waste management, and to create a consortium of stakeholders to demonstrate the MSFR beyond SAMOFAR.

Besides the EU efforts in SAMOFAR, the consortium tightly connects with other large projects in China, Russia and the USA to exchange information, and to coordinate and share resources.

The project represents “the first step towards large scale validation and demonstration of the technology,” says Jan Leen Kloosterman, a professor of nuclear reactor physics at TU Delft and the coordinator of SAMOFAR. “We expect the project will lead to a large commitment from the nuclear community and industry towards the development of this new technology .”

At the end of August 2015 the kick –off meeting of the SAMOFAR project took place at Delft University of Technology with over 35 enthusiastic participants.

### **More information**

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