Last August the Lawrence Livermore National Laboratory in California USA claimed to have reached the threshold of laser fusion ignition on the National Ignition Facility (NIF). Few months later the tokamaks EAST in China and Jet in UK established new fusion energy and plasma temperature records in Magnetic Confinement Fusion. In the same time a young company reached for the first time 100 millions Kelvin in a facility built on private funds, proving how active fusion research is.

In this talk we will present the fundamentals of thermonuclear fusion and the different approaches to control thermonuclear fusion reactions. We will explain what those recent records really mean and how the different approaches and projects compare to each others. The presentation will concentrate then on the 10 years journey leading to the recent breakthrough obtained on NIF. Last, we will discuss the impact of these results on the Inertial Confinement Fusion community and the long term perspectives.