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## The Accelerator-on-a-Chip International Program

*Monday, September 25, 2017 10:00 AM (30 minutes)*

The Accelerator-on-a-Chip International Program (ACHIP) has been initiated in 2015 to advance research on laser-based acceleration in dielectric microstructures. These microstructures can be built using the technologies of the semiconductor industries and integrated on the surface of a chip. Scientists from seven universities, three national laboratories, and industrial partners are working together to develop all necessary components for such a compact accelerator.

At the same time, we are working on the integration of these components into an accelerator-on-a-chip. This will include an electron source that emits suitable electron bunches into the dielectric structure, as well as the power source, coupling structures, and control of the electromagnetic fields. The experiments are supported by start-to-end simulations of the processes.

We summarize here the results of the first two years of the ACHIP collaboration. The experimental infrastructure has been set up in several laboratories, and first experiments have been performed at different beam energies. Numerical modeling is used to optimize the structures for coupling and acceleration.

**Primary author:** ISCHEBECK, Rasmus (Paul Scherrer Institut (PSI) - The ACHIP collaboration)

**Presenter:** ISCHEBECK, Rasmus (Paul Scherrer Institut (PSI) - The ACHIP collaboration)

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