Institute of Applied Physics
Friedrich-Schiller-Universität Jena

Master/bachelor thesis

in the subject area of

High-energy extraction using electro-optic divided-pulse amplification

State-of-the-Art ultrafast fiber lasers excel at delivering high average power pulses at both very high beam and pulse quality. However, pulse energy at the same time is limited through the fiber concept itself as the propagation of short pulses in optical fiber yields detrimental nonlinear effects. Divided-pulse amplification is one approach to circumvent this issue by distributing the pulse energy in a pulse burst. Nonlinearity is reduced as the peak power of each pulse in the burst is significantly lower compared to a single pulse. The combination of the pulse burst back into a single pulse is done in optical delay lines, which has been demonstrated in proof-of-principle experiments. In this work this experiment is to be built on a separate side and then it is to be implemented into an existing high-power laser system to evaluate its performance.

Please, send your application preferably by email to

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