In a plasma wave that is driven by a high-intensity laser pulse electrons can be accelerated to GeV energies within centimeters. These highly relativistic electrons can be used to generate extremely directed, brilliant, ultra-short X-ray pulses (Thomson scattering, betatron radiation). This concept beats conventional accelerators and X-ray sources in size by more than three orders of magnitude which allows for the usage in routine medical applications (e.g. high-resolution phase-contrast imaging of tumors). Furthermore, the unprecedentedly short pulse length enables time-resolved probing of ultra-fast processes.

Positions are available for experimental work on electron acceleration, X-ray generation, time-resolved pump-probe experiments, ..., and for more theoretical work based on large-scale simulations.

For more information check
http://www.attoworld.de/karsch-group/

Already interested?
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