



Contribution ID: **868** Contribution code: **TUPA051**

Type: **Poster Presentation**

## TeV/m acceleration in laser-graphene interactions

*Tuesday, 9 May 2023 16:30 (2 hours)*

Electron acceleration in solid-state plasmas is of interest within the Laser Wakefield Acceleration (LWFA) research. Layered nanostructures such as graphene nanoribbons can be used as targets for intense UV lasers to generate and accelerate electron bunches. We present numerical Particle in Cell (PIC) simulations of a novel sub-femtosecond self-injection scheme which relies on edge-plasma oscillations in a layered graphene target. The scheme delivers 0.4 fs-long electron bunches of 2.5 pC total charge with an energy gain rate of 4.8 TeV/m. These parameters are unprecedented and, if confirmed experimentally, may have an impact on fundamental femtosecond research.

### Funding Agency

### Footnotes

### I have read and accept the Privacy Policy Statement

Yes

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**Session Classification:** Tuesday Poster Session

**Track Classification:** MC3: Novel Particle Sources and Acceleration Techniques: MC3.A15: New Acceleration Techniques