Targetry for Laser-driven Proton (Ion) Accelerator Sources: First Workshop

presented by Munich-Centre for Advanced Photonics (MAP)
http://www.med.physik.uni-muenchen.de/research/laser-acceleration/targetry-workshop/index.html

What does it take to make laser-ion accelerators a viable experiment tool?

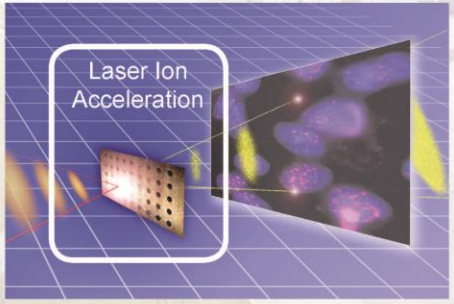
Organizers: J. Schreiber (LMU), J. Wilkens (TUM), P. Bolton (KPSI), F. Nüsslin (TUM

Contact: J. Schreiber: joerg.schreiber@mpq.mpg.de, A. Leinthaler: +49 (0)89 2891407

Location: Institute for Advanced Study (IAS), Garching, Germany **Date:** 9th - 11th Oct 201

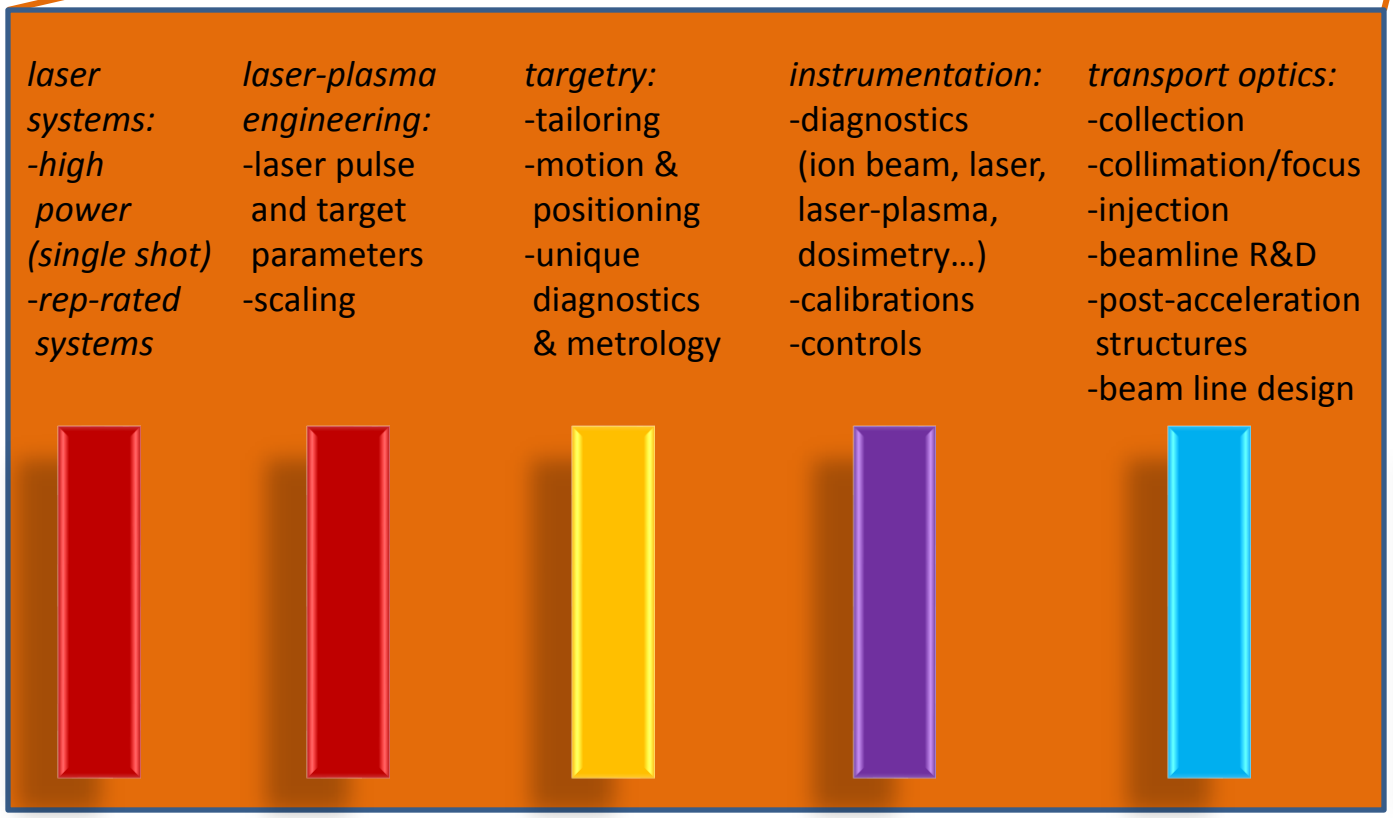
Topics

- Targets: Gas - near-critical - solid, Angstroms or Millimeter
- Fabrication and handling: Production - Characterization - Alignment
- Shape and density conditioning
- Control of ion properties: angular divergence, energy spectrum, efficiency, bunch duration
- Rep-rated capability
- Pre-, intra- and post-irradiation accelerator diagnostics
- Challenges of technology development



LEX Photonics CALA IAS Technische Universität München LMU

Integrated Laser-driven Ion Accelerator System (ILDIAS): Critical Components



a construct for perspectives and strategies

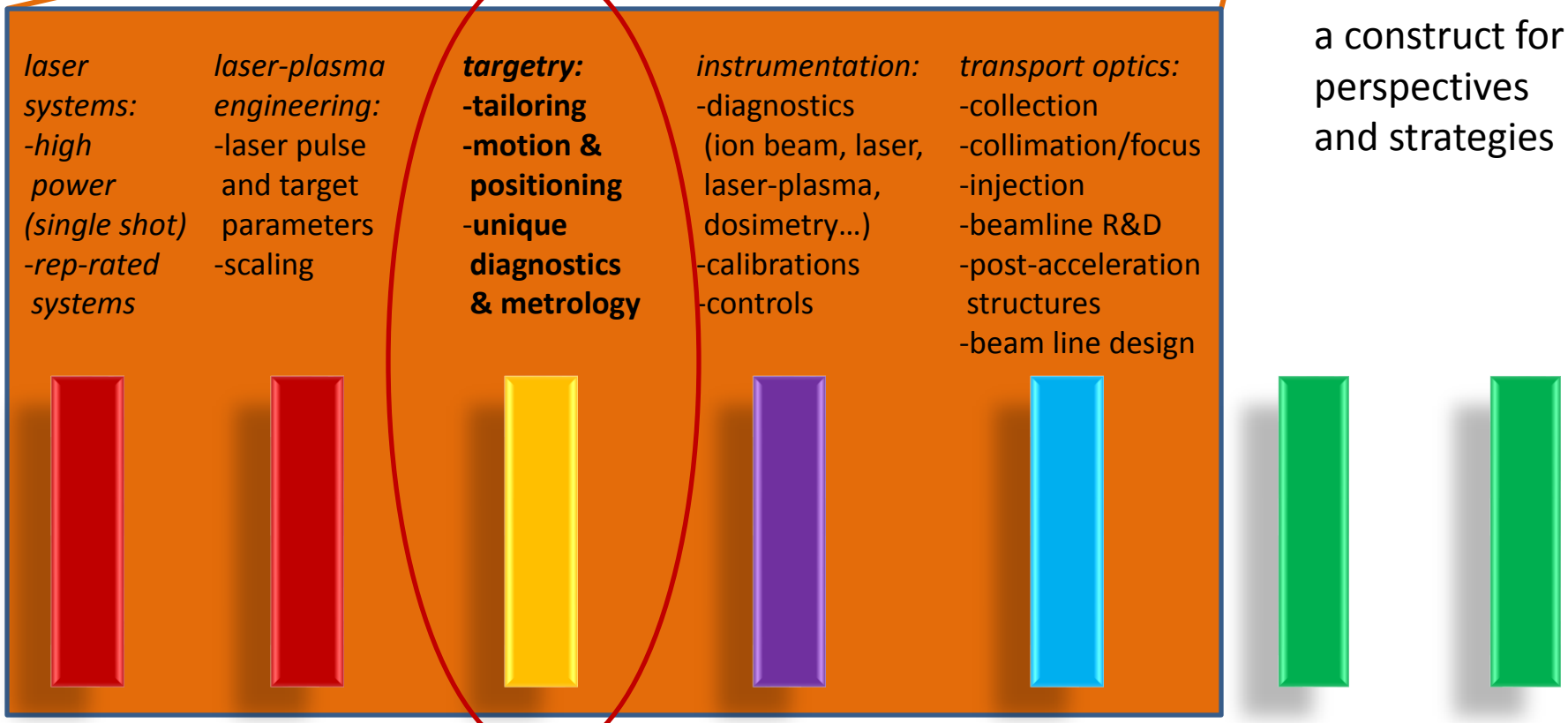
laser/plasma-centric (source technology)

ILDIAS concept distinguishes beam transport vs delivery

applications

accelerator-centric

Integrated Laser-driven Ion Accelerator System (ILDIAS): Critical Components



a construct for perspectives and strategies

laser/plasma-centric (source technology)

applications

ILDIAS concept distinguishes beam transport vs delivery

accelerator-centric

Goal: develop laser-driven accelerator sources and accelerators for applications (medical application is likely the most demanding)

In 24 talks we will focus on **Targetry** as a key enabling component for integrated laser-driven ion accelerator systems (ILDIAS)

Goal: develop laser-driven accelerator sources and accelerators for applications (medical application is likely the most demanding)

In 24 talks we will focus on **Targetry** as a key enabling component for integrated laser-driven ion accelerator systems (ILDIAS)

targetry determines laser pulse requirements with evolving sophistication (consider laser-target parameter space as source parameter space)

unique features - example, can be tailored/conditioned by lasers and also can function as the first ion 'optic'

Goal: develop laser-driven accelerator sources and accelerators for applications (medical application is likely the most demanding)

In 24 talks we will focus on **Targetry** as a key enabling component for integrated laser-driven ion accelerator systems (ILDIAS)

targetry determines laser pulse requirements with evolving sophistication (consider laser-target parameter space as source parameter space)

unique features - example, can be tailored/conditioned by lasers and also can function as the first ion 'optic'

What are desirable target features - how do we assess efficacy ?
What are the best targets ?
To what extent is this application specific ?
→ What does it take to make laser-ion accelerators a viable experiment tool ?

Goal: develop laser-driven accelerator sources and accelerators for applications (medical application is likely the most demanding)

In 24 talks we will focus on **Targetry** as a key enabling component for integrated laser-driven ion accelerator systems (ILDIAS)

targetry determines laser pulse requirements with evolving sophistication (consider laser-target parameter space as source parameter space)

unique features - example, can be tailored/conditioned by lasers and also can function as the first ion 'optic'

What are desirable target features - how do we assess efficacy ?
What are the best targets ?
To what extent is this application specific ?
→ What does it take to make laser-ion accelerators a viable experiment tool ?

This focus can help us to identify the state-of-the –art , requirements and technical /engineering challenges relevant to applications

We are glad that you are here and we wish you an inspiring workshop…..