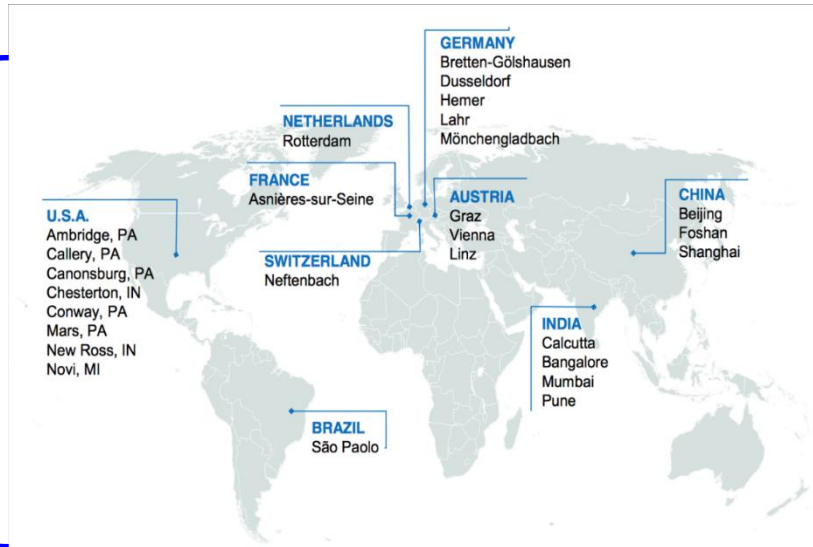


HIGH POWER LASER CLEANING FOR THE 21ST CENTURY

THE MOST POWERFUL CLEANING LASER IN THE WORLD

**YOUNG KWON, PH.D.
EPIC GLOBAL TECHNOLOGY SUMMIT
BERLIN GERMANY
AUGUST 2019**

ANDRITZ POWERLASE



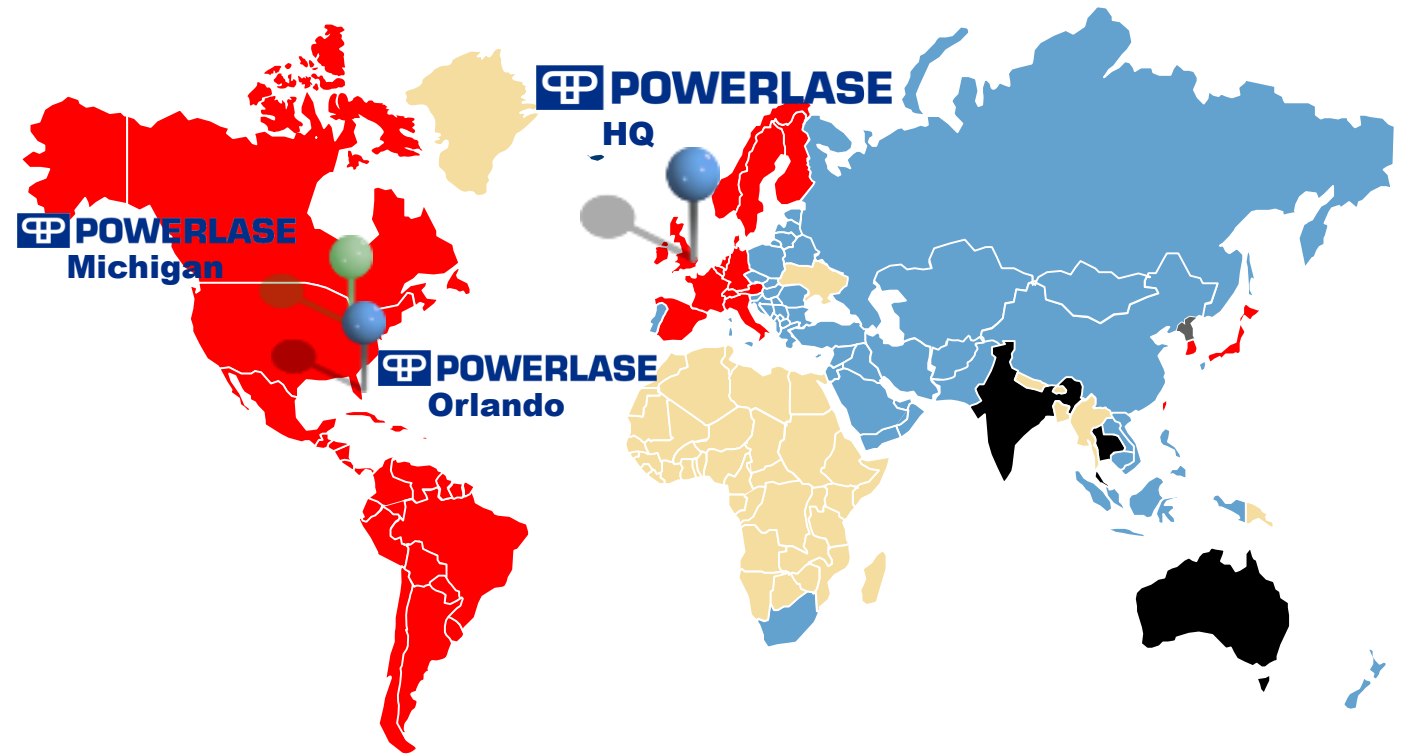
ANDRITZ Group, an Austrian plant engineering group headquartered in Graz, Austria, founded in 1852 has 28,000+ employees at 220+ production and service facilities over the world, with revenue of 7 billion EUR.

ANDRITZ Powerlase, a subsidiary of ANDRITZ Group, is an independent, innovative, high power high energy laser company, focused on powerful nanosecond Solid State lasers and Fibre lasers, developed for industrial applications primarily for use in materials processing.

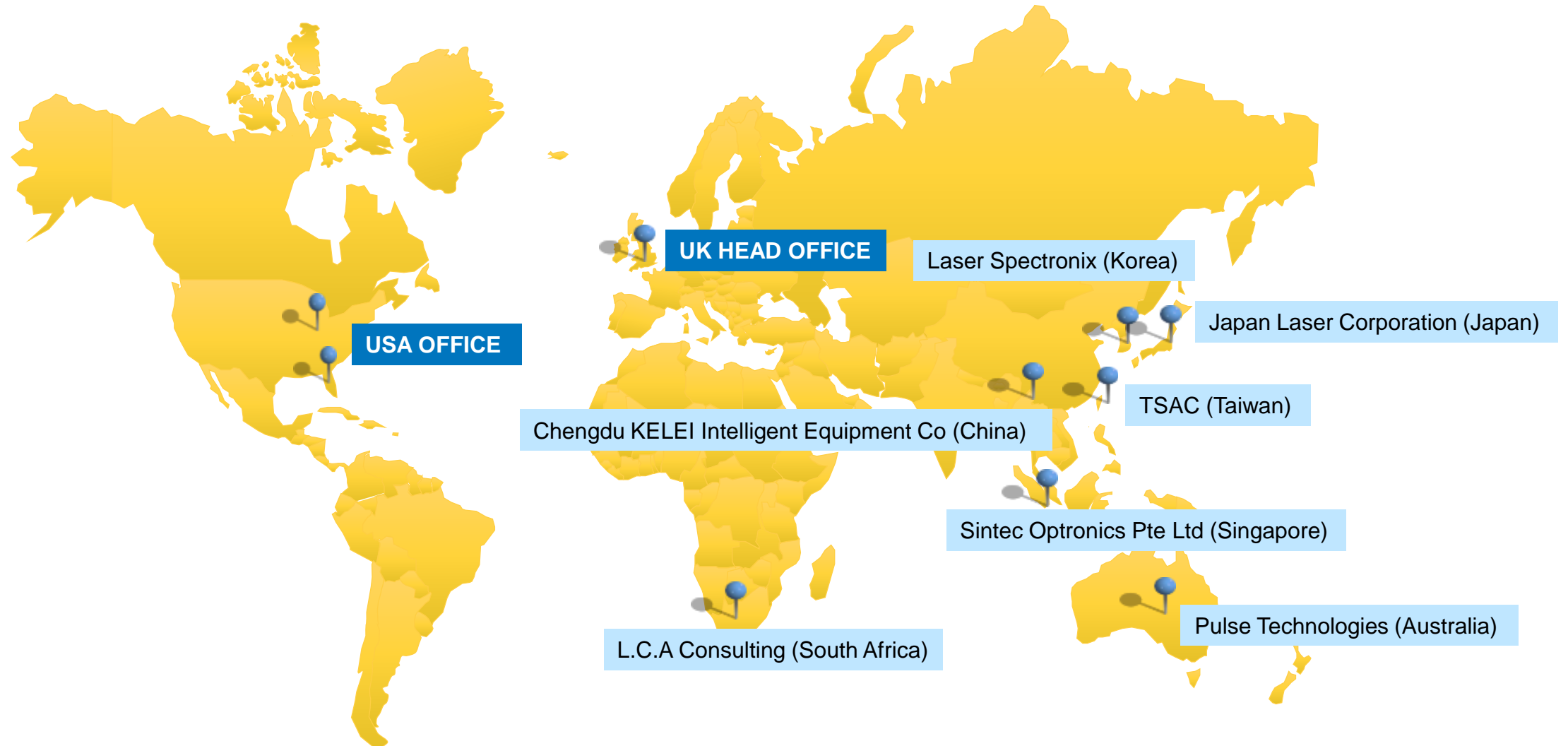
ANDRITZ Powerlase works with worldwide leading partners to successfully address the needs of the Electronics, Automotive, Aerospace, Defence, Shipbuilding, Oil and Gas, Nuclear Waste Management and Conservation industries. The high power, high energy laser technology offers solutions for Ablation, Surface Processing, Cleaning, Depainting, Polishing and Processing Composite Materials in industrial applications with demands of high production speed.

MANUFACTURING AND SUPPORT

- Crawley UK, R&D, Application Lab, EU Sales, Global Service & Production
- Orlando FL, USA, Application Lab, USA Sales and Service
- Novi MI, USA, Service Support



SALES NETWORK



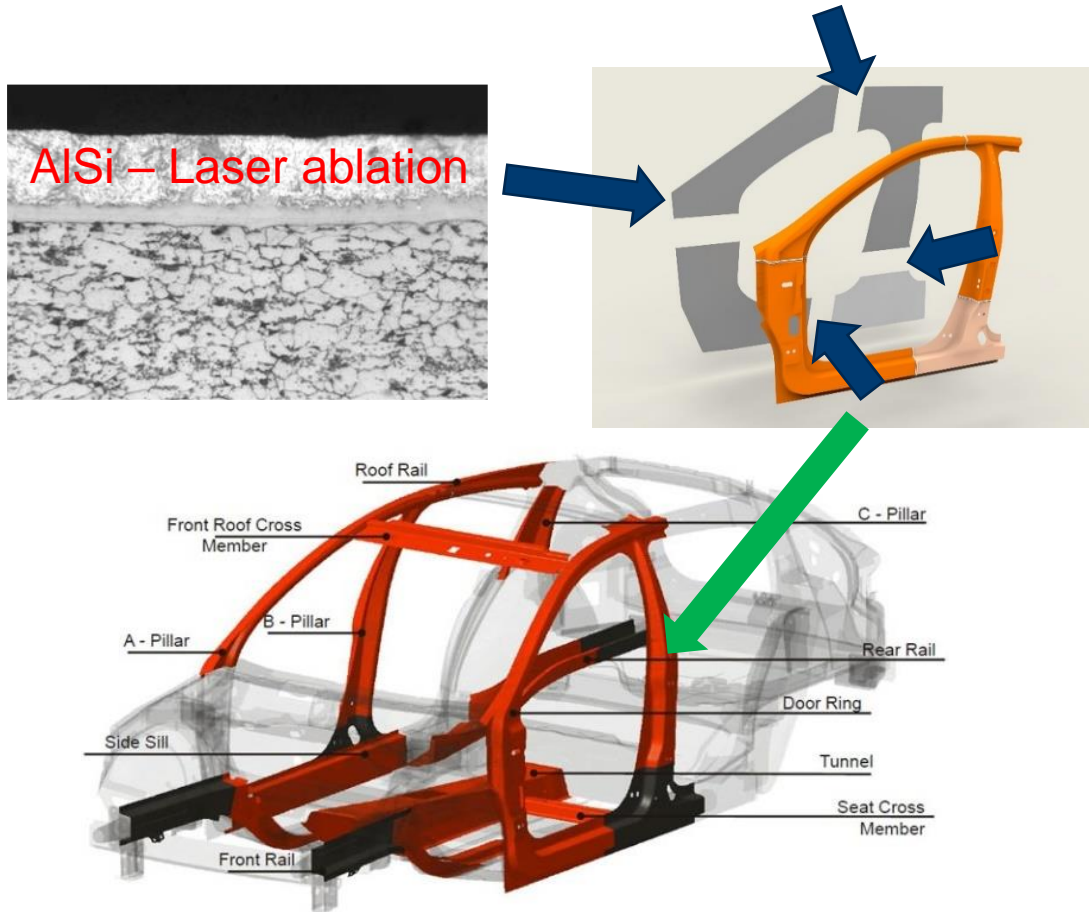
HIGH POWER PULSED LASER PRODUCTS AND APPLICATIONS



HOT STAMPED TAILORED BLANKS ABLATION SYSTEM

For vehicle weight reduction and increased safety

- Blanks (boron steel) coated with Si rich aluminium alloy for protection.
- The coating is removed by 1.6kW Rigel lasers before welding, then stamped into shape.



INDUSTRIAL LASER CLEANING PRODUCTS

VULCAN CLEANING LASER SYSTEMS

The Vulcan Family of Pulsed Laser Cleaning Solutions (Typical Pulse Width 30 – 70 ns)


Model	Laser Type	Laser Power	Pulse Energy	Remarks
Vulcan 1600e	Solid State	1600W	200 mJ	Heavy duty cleaning
Vulcan 1200e	Solid State	1200W	160 mJ	Heavy duty cleaning
Vulcan 800e	Solid State	800W	120 mJ	Medium duty cleaning
Vulcan 500c	Fiber	500W	45 mJ	Light duty cleaning

VULCAN 1600E – SOLID STATE LASER



The first in a family of Vulcan systems, this rapid paint and coating removal system uses a 1.6 kW Q-switched DPSS laser, fibre delivered to a robust galvanometer based ergonomic hand-held, compact scan head. With the proven reliability and high pulse energy patented process, Vulcan offers faster processing and unlocks the highest potential of laser based paint, coating removal and surface preparation.

- Most powerful laser cleaning system
- 1.6 kW, up to 200 mJ pulse energy
- Laser and handheld control via touchscreen interface
- >50m long fibre



**THE WORLDS
MOST POWERFUL
LASER CLEANING
SYSTEM**



VULCAN 500C – FIBER LASER



- Most compact 500 W laser cleaning system
- Up to 45 mJ pulse energy
- Laser and handheld control via touchscreen interface
- **Single phase 200V AC input power**
- Ultra Light Handheld – 2kg
- Mobile
- **No external water connection required**
- Edge Blanking Technology (Patent Pending)
- Easy to use

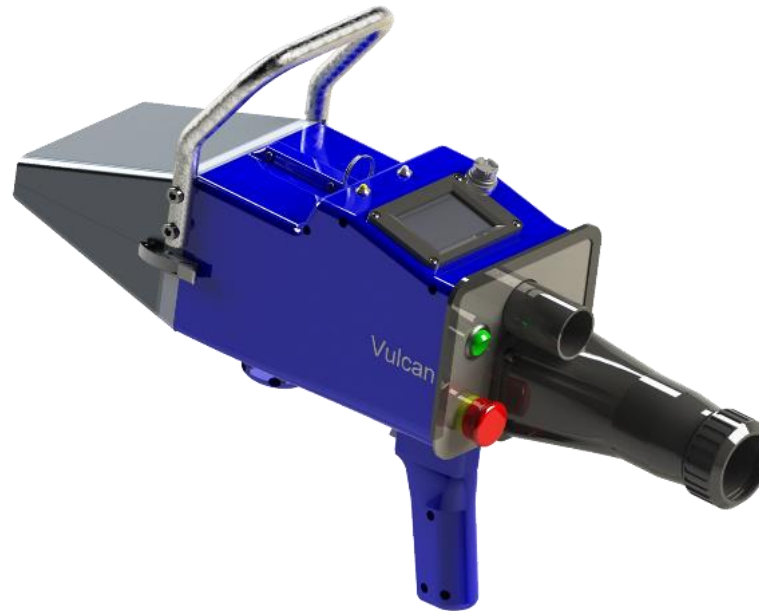
THE WORLDS
MOST COMPACT
& MOBILE 500W
LASER CLEANING
SYSTEM

END EFFECTOR HANDHELD AND ROBOTICS SOLUTION

Light weight (2kg)
500W, 50mJ
Up to 30m from the laser



Remote control (laser, scanner)
Integrated suction and purge gas
1.6kW, 200mJ
Up to 50m from the laser



Automated Robotics solution
3D object mapping
Integrated process monitoring
sensors for safe operation

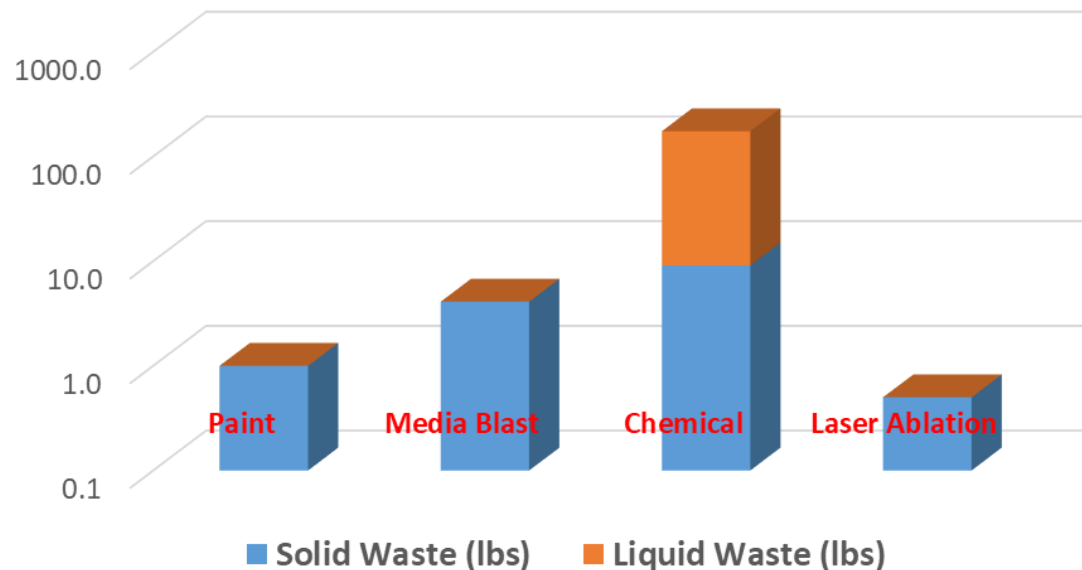


LASER CLEANING APPLICATIONS

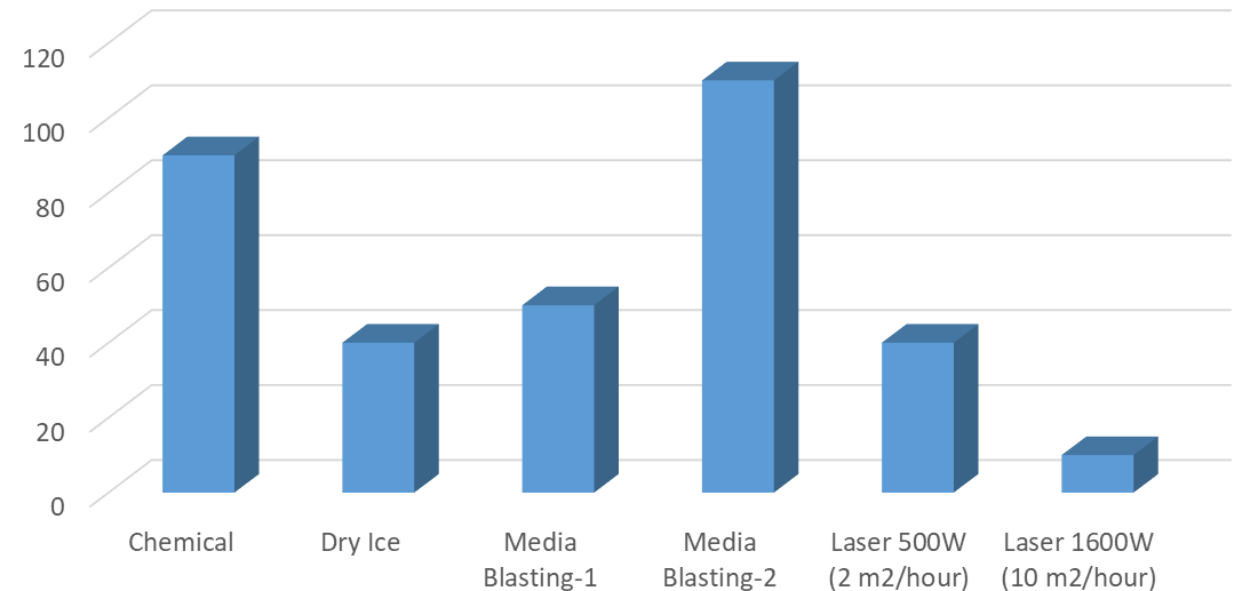
WHY LASER CLEANING IS THE CHOICE IN THE 21st CENTURY?

- ✓ Protect environment
- ✓ Safer process for the operator
- ✓ Cost effective

Toxic Waste Generation (lbs) - USAF

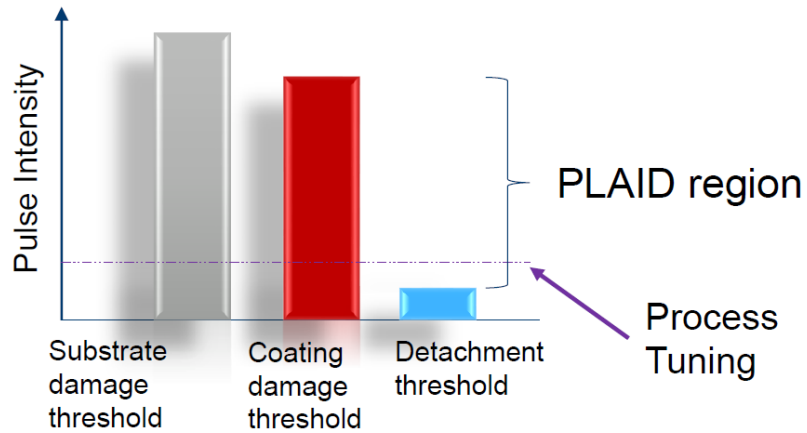


Burdened Cleaning Cost (\$/m²)



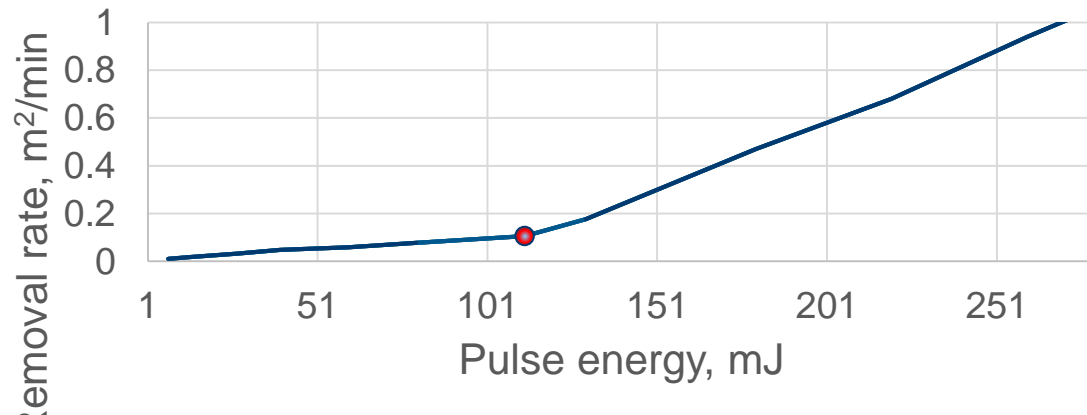
Even faster laser cleaning – PLAID™

Detachment process (Pat. Pending)



PLAID™: Pulse Laser Ablation Induced Detachment
→ Separation of the coating from the substrate
by high power high energy laser

Nonlinear increase of semi-transparent
paint removal rate vs pulse energy,
constant intensity



INDUSTRIAL APPLICATIONS



Heavy Rust
and Paints

Conservation

**Laser
Cleaning**



Paints, Mold,
Pre- & Post weld

Aerospace
Defense



IN THE WORKS



3.2kW DPSSL
Sub-nano
1.2kW Low M²

Low cost
portable

**Laser
Cleaning**



Turn-key solution

Turn-key solution



THANK YOU

 **POWERLASE**

 **POWERLASE**

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