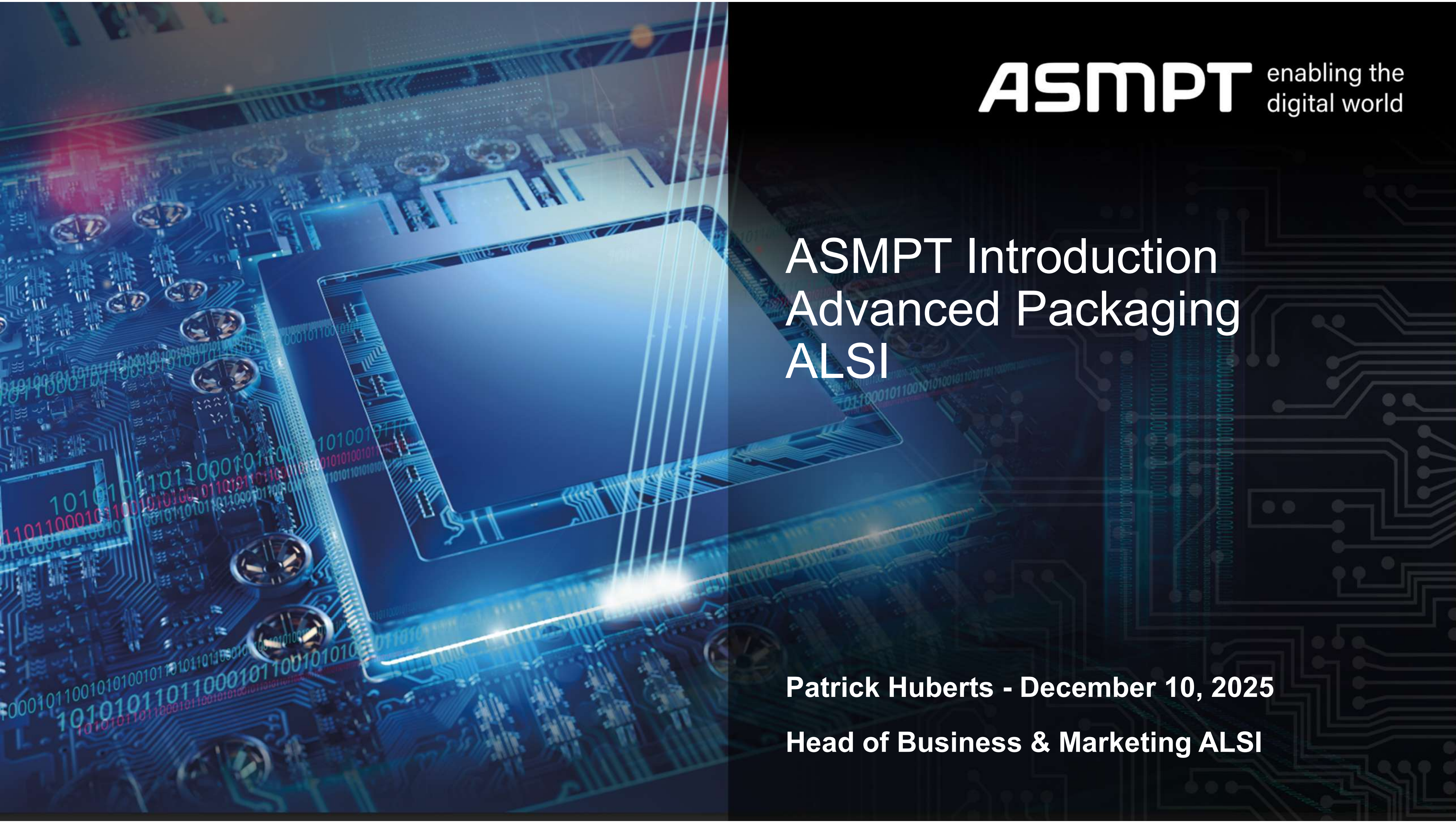

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# ASMPT Introduction Advanced Packaging ALSI

**Patrick Huberts - December 10, 2025**

**Head of Business & Marketing ALSI**

# COMPANY OVERVIEW

Global high-tech company with solid fundamentals and strong growth prospects.

**Number of employees**

**~ 10,600**

*As at end Dec 2024*
*Excludes flex & outsourced staff*

**Present in more than**

**30**

**Countries**

**FY 2024 revenue**

**US$1,695M**

**~15**

**R&D Centres Across Asia, Europe & America**

**~15**

**Significant Manufacturing Locations Worldwide**

**>2,000**

**Patents on key leading-edge technologies**

Private and confidential

# Company Overview

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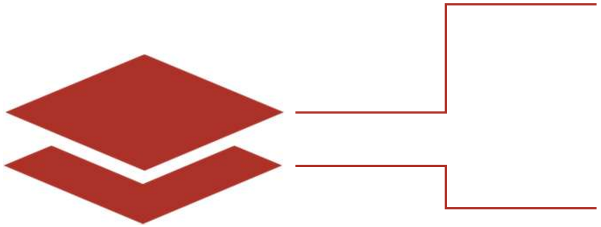
**Advanced Packaging and Mainstream Business Units**



## ASMPT Semiconductor Solutions

Die Bonders, Hybrid Bonders, Wire Bonders, Flip Chip Bonders, Thermal Compression Bonders, LED Packaging Equipment, Encapsulation, Test Handlers, CMOS Image Sensor Equipment, Laser Singulation, Photonics, AIoT (Artificial Intelligence of Things)

## ASMPT SMT Solutions

SIPLACE Placement Solutions, DEK Printing Solutions & Process Support Products, SMT Process Solutions, WORKS Shopfloor Management Software Suite, Critical Manufacturing MES (Manufacturing Execution System), Complete Smart Line and Factory Solutions & Services

1975
**Founded** as the Asian marketing arm of its Netherlands-based parent ASM International N.V.

1989
**ASM Pacific Technology Ltd** formally listed on the Hong Kong Stock Exchange

1990
Company begins operating in Singapore

2002
ASMPT becomes **#1** Semiconductor Assembly and Packaging Equipment Manufacturer in the world

2005
ASMPT achieves a market capitalisation exceeding **$2 billion USD**

2011
Singapore becomes the Global Headquarters

ASMPT ↩ **SIPLACE Team from Siemens AG, Germany** (SMT Placement)

TCB

2013
ASMPT ↩ **DEK, United Kingdom** (SMT Printing)

2014
ASMPT ↩ **Advanced Laser Separation International B.V. (ALSI), Netherlands** (Laser Dicing / Grooving)

ALSI

2018
ASMPT ↩ **NEXX, USA** (Deposition)

ASMPT ↩ **AMICRA, Germany** (Die Bonding)

ASMPT ↩ **Critical Manufacturing, Portugal** (MES)

NEXX, Amicra

2020
ASMPT ↩ **SKT Max, PRC** (MES)

2021
ASMPT ↩ **Semiconductor Wet Advanced Technology, PRC** (Deposition)

2022
ASMPT ↩ **Automation Engineering Incorporated (AEI), USA** (Automotive CIS)

2023
Established **AoXinMing 奥芯明, PRC**

ASMPT ↩ **BOREY, PRC** (SMT Placement)

Hybrid Bonding

↩

# Advanced Packaging

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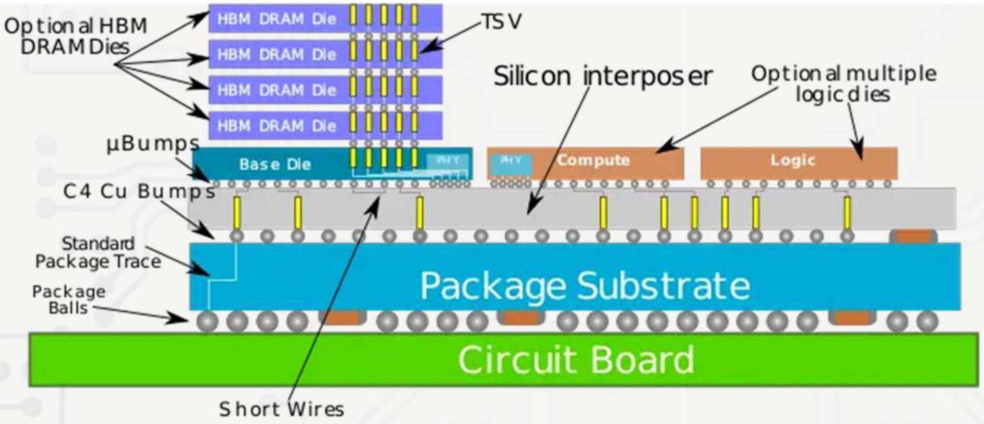
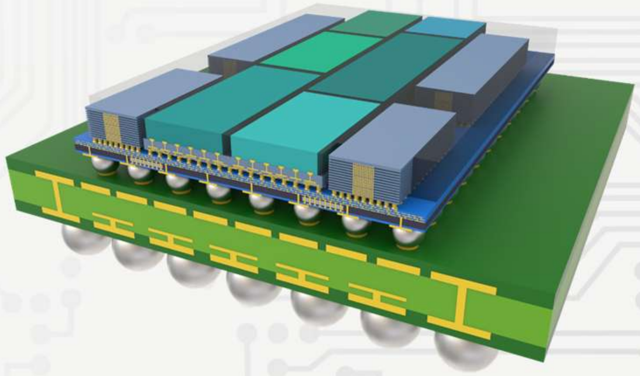
## ASMPT Comprehensive suite of solutions to capture advanced packaging opportunities

**Current & Emerging Applications**





| Physical Vapor Deposition | Electro-Chemical Deposition (Wafer/ Panel Level Plating) | Laser Singulation | Wafer / Panel Level Fan-out | Photonics | Thermo Compression Bonding | Hybrid Bonding | SMT SiP Placement* |
|---|---|---|---|---|---|---|---|
|  |  |  |  | <br><br> |  |  |  |
| APOLLO | STRATUS | LASER 1205 | NUCLEUS | NANO<br>NOVA<br>Photon Pro | FIREBIRD | LithoBolt | SIPLACE TX micron |

# Advanced Packaging Solutions

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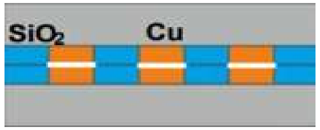
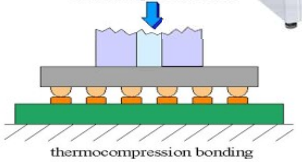
**LithoBolt**

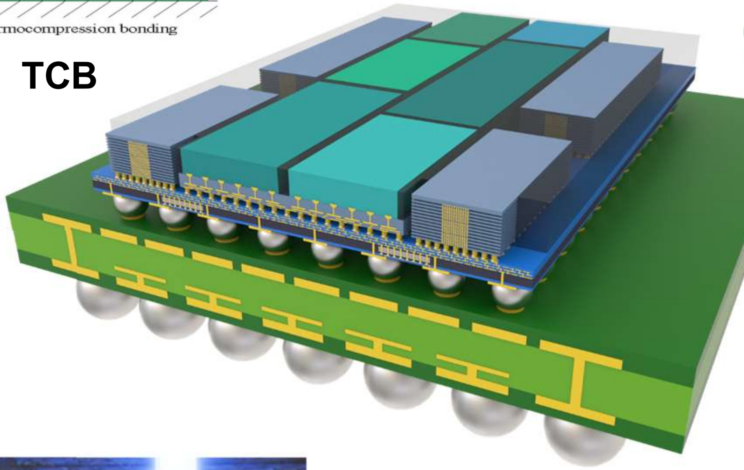


**Hybrid Bonding Cu to Cu**



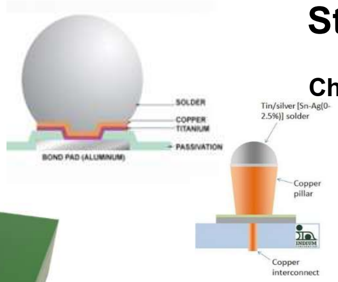
**TCB**

**FIREBIRD**

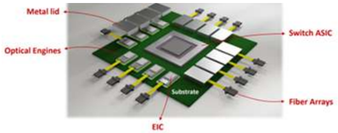


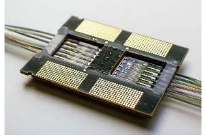
**Apollo PVD**
Physical
Vapor Deposition

**Stratus ECD**
Electro
Chemical Deposition



**Co packaged Optics**





**Si Photonics**

**Nova**

**Nano**

**LASER1205**

**LASER1206**

**Laser Dicing & Grooving**

# ALSI: Laser Singulation Solutions

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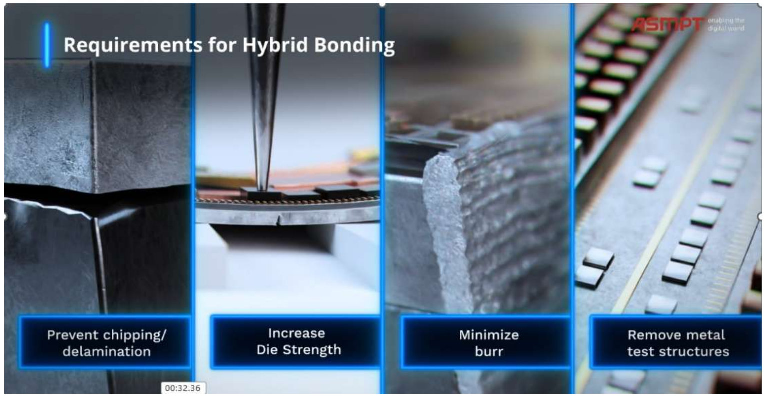
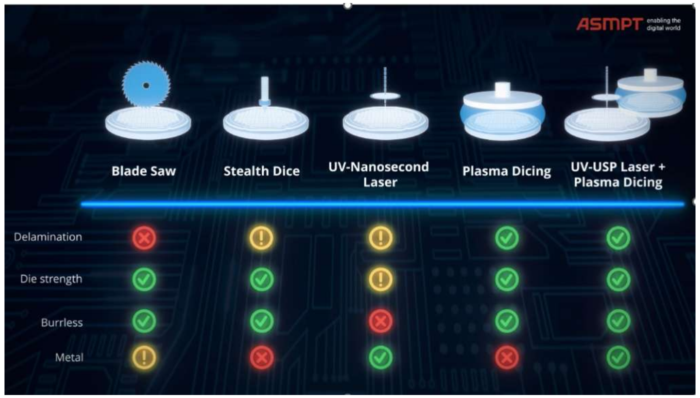
ASMPT ALSI is the pioneer of **multi-beam laser dicing & grooving.** With our **advanced laser singulation technology** it's possible to dice or groove wafers with low power per beam, minimizing the thermal impact, resulting in high quality and high productivity.

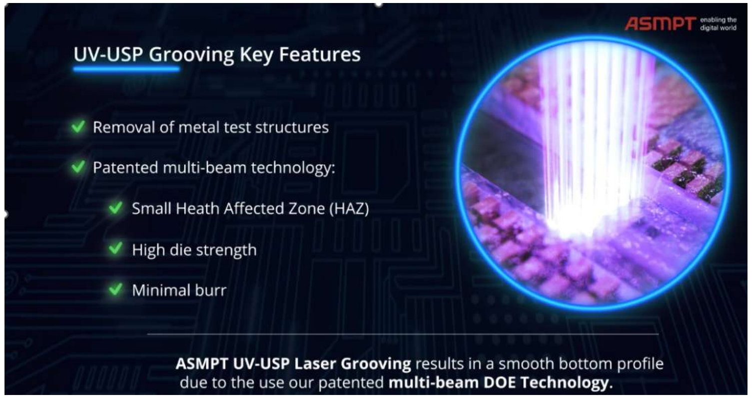
## Emerging: USP Laser Grooving + plasma Dicing enabling Hybrid Bonding


Requirements for Hybrid Bonding

- Prevent chipping/ delamination
- Increase Die Strength
- Minimize burr
- Remove metal test structures

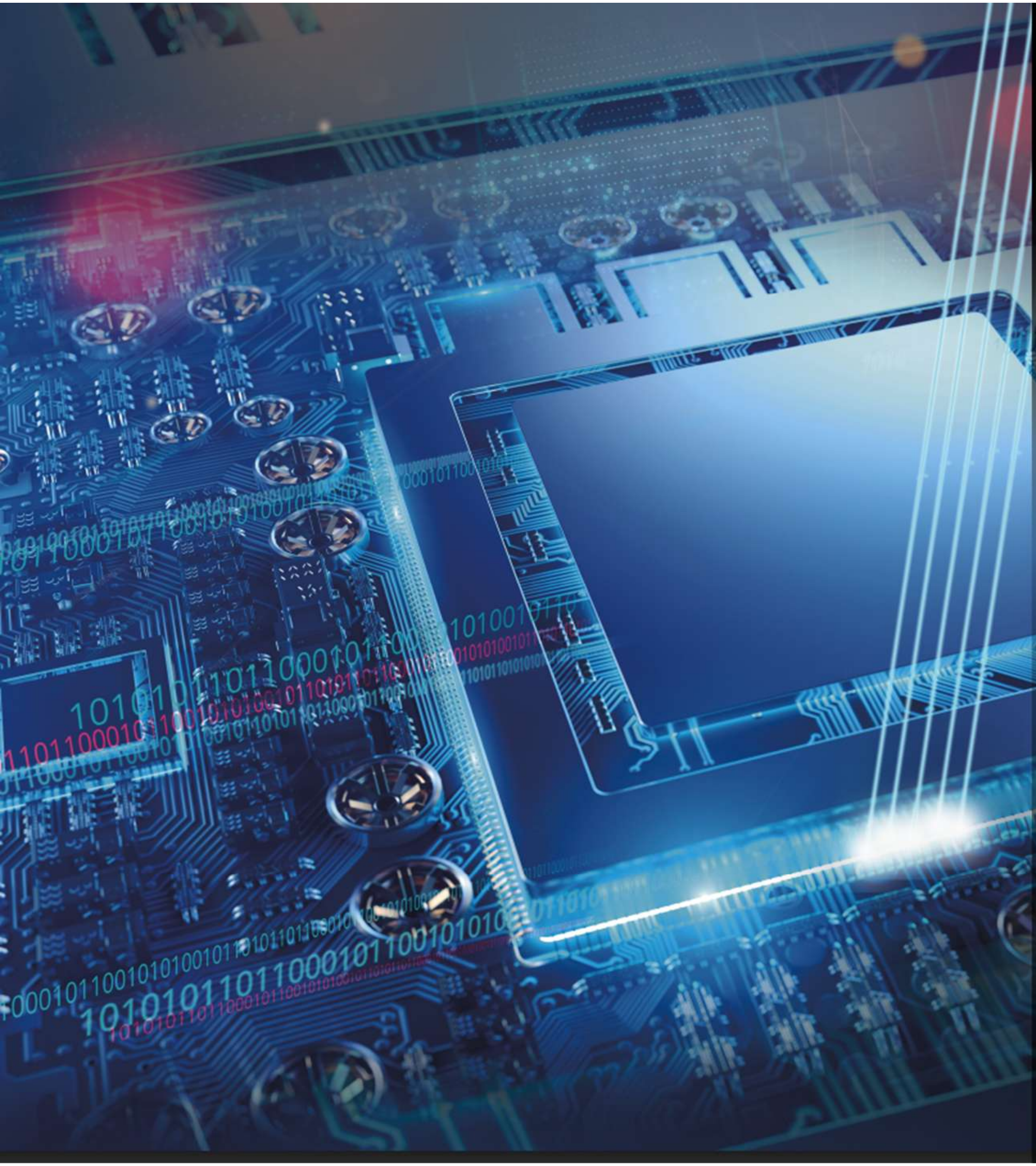


| | Blade Saw | Stealth Dice | UV-Nanosecond Laser | Plasma Dicing | UV-USP Laser + Plasma Dicing |
|---|---|---|---|---|---|
| Delamination | ✗ | ! | ! | ✓ | ✓ |
| Die strength | ✓ | ✓ | ! | ✓ | ✓ |
| Burrless | ✓ | ✓ | ✗ | ✓ | ✓ |
| Metal | ! | ✗ | ✓ | ✗ | ✓ |


UV-USP Grooving Key Features

- ✓ Removal of metal test structures
- ✓ Patented multi-beam technology:
  - ✓ Small Heath Affected Zone (HAZ)
  - ✓ High die strength
  - ✓ Minimal burr

**ASMPT UV-USP Laser Grooving** results in a smooth bottom profile due to the use our patented **multi-beam DOE Technology.**



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# Thank You!

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