

Alinstante

A Rapid, Flexible, Modular Workcell

Alinstante's **availability** to conduct testing immediately erases wait times for scheduling. Its **consistency** outperforms that achievable by human testers, and its tests are **repeatable** over decades when human expertise may disappear.

Providing Rapid Inspection and Processing

- **Alinstante** is a robotic workcell that enables high-throughput automation. Spanish for "instantly," Alinstante is named for the dramatic acceleration and flexibility it brings.
- Driven by needs in 3D printing and additive manufacturing, where new parts and materials are quickly produced, Alinstante provides an agile platform for rapid inspection and post-processing.
- At the intersection between materials science and manufacturing, Alinstante enables rapid discovery in a research environment or production/quality automation for manufacturing.

An Enabling Framework Open for Partnerships

- Alinstante's modular petal concept is extendable, scalable, and parallelizable, adding functionality to meet project needs.
- Sample exchange module allows users to add or remove parts without interruption.
- First module: GOM ATOS Core structured blue light 3D scanner
 - ~1 million measurements in <5 minutes
 - Voxel resolution better than 0.050 mm
- Direct comparison to CAD model or other parts
- Additional rapid high-throughput modules are envisioned, and we are actively seeking potential users for collaboration.

Contact Information

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Modules in Development

Tensile testing
 Hardness testing
 Laser-Induced Breakdown Spectroscopy

Module Concepts

(opportunities for collaboration)

- | | |
|-----------------------|------------------|
| • Processes | • Welding |
| • "Inline" 3D Printer | • Heat treatment |
| • Surface grinding | • Coating |
| • CNC milling | • etc. |

Non-destructive Measurements

- | | |
|---------------------|-------------------|
| • Surface roughness | • Crystal Texture |
| • Density & mass | • Phase content |
| • X-ray tomography | • Resonance |
| • Residual stress | • Hermeticity |
| • Grain size | |

Other Property Measurements

- | | |
|----------------------|------------------------|
| • Fatigue properties | • Thermal expansion |
| • Fracture toughness | • Dielectric breakdown |
| • Friction & wear | • Permeability |
| • Corrosion | |

