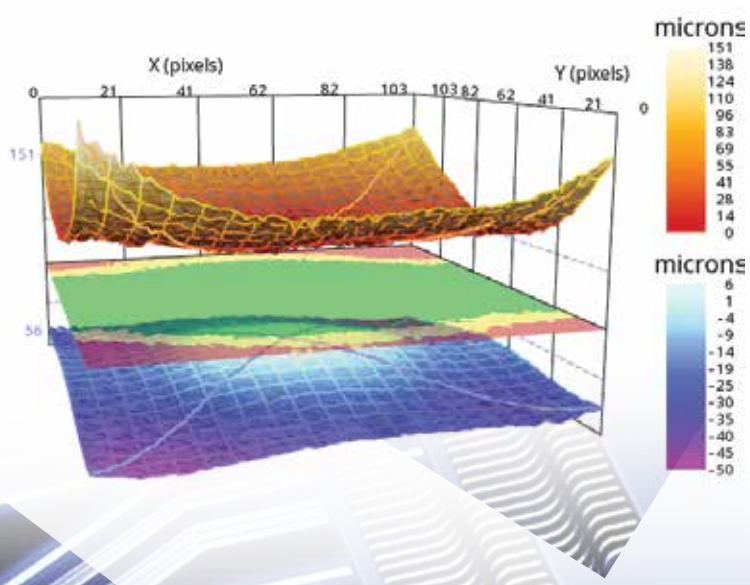
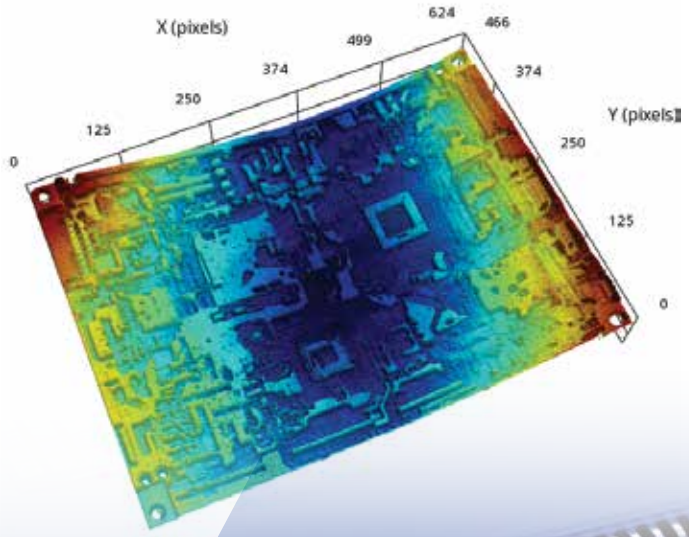
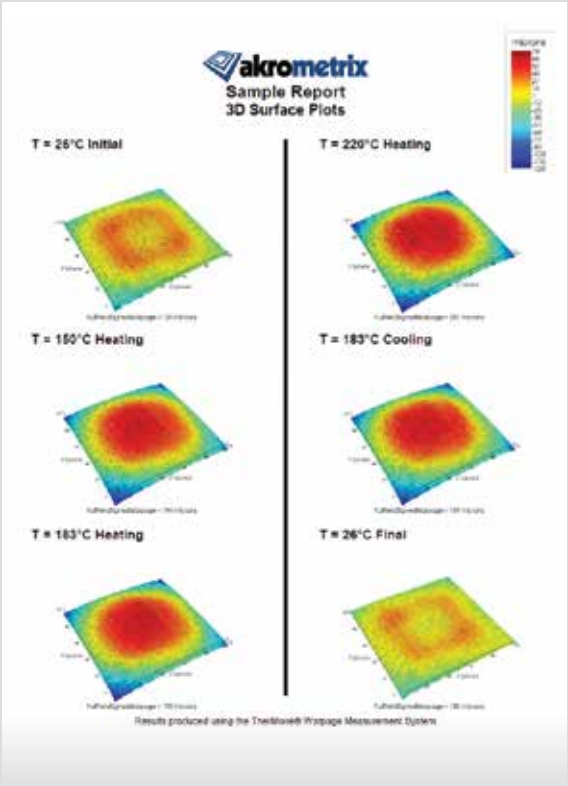
akrometrix

THERMAL WARPAGE AND STRAIN METROLOGY





Test



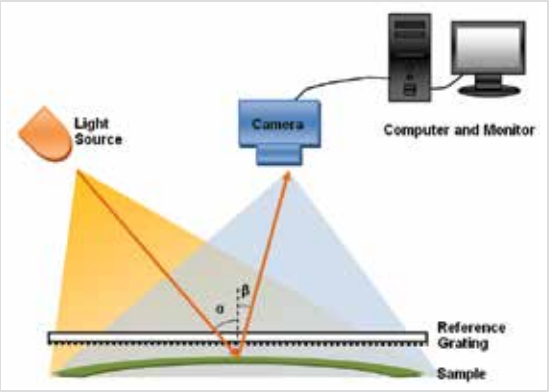
Akrometrix offers fast, flexible and accurate test services for:

- Flatness, warpage & coplanarity of PCBs, substrates, ICs, packages, whole wafers and wafers on film frame
- In-plane deformation (strain) and CTE measurement
- Form factors ranging from 2x2mm to 600x600mm
- Dynamic temperature profiling from -50°C—300°C

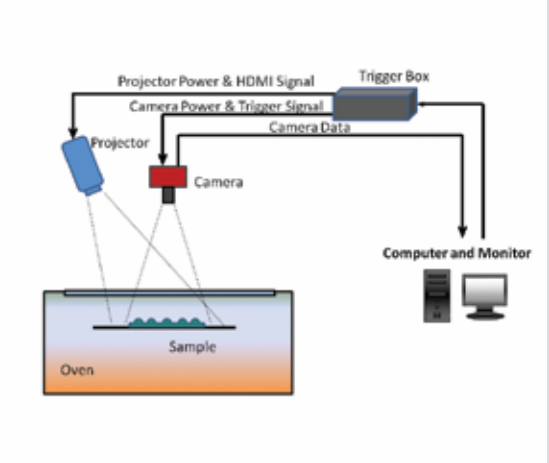
Test Services are performed at our state-of-the-art applications lab in Atlanta, Georgia, utilizing our latest generation equipment.

Turnaround times range from 2-10 days, dependent on volume of testing required.

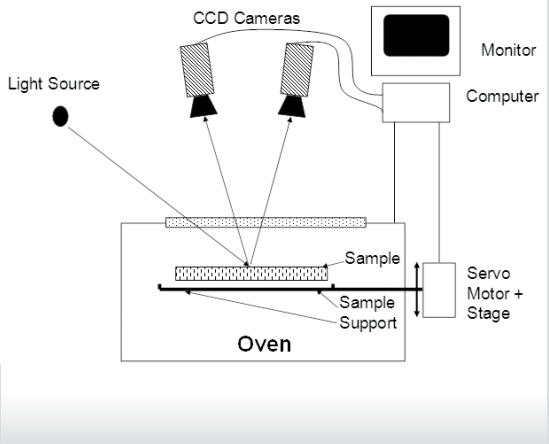
Our Technology for Thermal Warpage and Strain Metrology



Shadow Moiré uses geometric interference between a reference grating and its shadow to measure relative vertical displacement. Akrometrix combines this technology with an oven to allow temperature profiling from -50°C—300°C with a resolution down to <1µm.

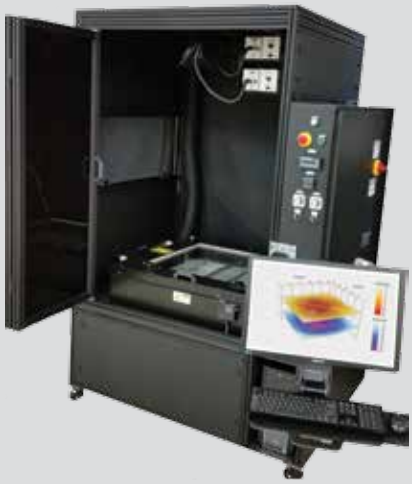


Digital Fringe Projection (DFP) is capable of measuring relative vertical displacement on non-continuous surfaces with high data density via projecting a set of fringe lines onto the sample. Like shadow moiré, we combine this technology with an oven to allow temperature profiling from 25°C—300°C with a resolution down to 5µm.



Digital Image Correlation (DIC) is an optical method that measures in-plane displacements for strain and CTE. Utilizing a two-camera approach enables measurement resolution down to 150 microstrain.

Our Products



Shadow Moiré (TherMoiré)

Our flagship system enables sub-micron warpage, flatness and coplanarity metrology on a variety of substrates, including:

- ICs
- Packages
- PCBs
- Whole Wafers
- Wafers on Film Frame
- Other Substrates/Devices

Capable of z-resolution down to 0.8µm at temperatures ranging from -50°C—300°C.

Akrometrix offers Shadow Moiré (TherMoiré) in 3 models.

AXP

(top left) is capable of samples up to 400x400mm and also can accommodate modules for DIC, DFP and CRE (see next page).

PS200S

(middle left) is capable of samples up to 200x200mm.

PS600S

(bottom left) is capable of samples up to 600x600mm.

Located in our Atlanta, GA applications lab, these systems are ready to measure your thermal warpage, flatness or coplanarity needs.

CXP

Our standalone Digital Fringe Projection system is designed for warpage, flatness and coplanarity metrology on non-continuous substrates such as BGAs, PoP, sockets, connectors, etc.

With a z-resolution of 5µm, the CXP utilizes a convective oven with temperatures of 25°C—300°C to best match a production/assembly reflow process.

Capable of samples sizes up to 300x300mm with a FOV of 48x64mm.

Additional Modules/Features

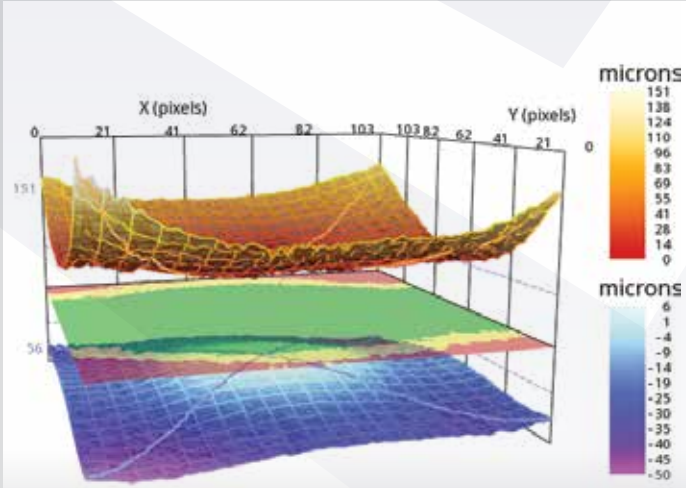
DIC Module – A module that can be inserted into the AXP, Digital Image Correlation (DIC) allows for both in-plane and out-of-plane displacements for strain and CTE measurements, with a strain resolution down to 150 microstrain.

DFP Module

A module that can be inserted into the AXP, Digital Fringe Projection (DFP) measures non-continuous surface warpage at temperatures from 25°C—300°C.

CRE Module

A Convection Reflow Emulation module that can be inserted into the AXP, CRE is a convective oven that allows for <1µm z resolution warpage metrology with a temperature range of 25°C—275°C, simulating reflow oven uniformity and rates.



Interface Analysis

Enables 3D, 2D and statistical review of the complete interface between two attaching surfaces at each temperature point during reflow. Pass/Warning/Fail Maps provide quick and easy gap analysis between two mating substrates and their expected interface.

Our Mission

We strive to be the Global Technology Leader in Thermal Warpage and Strain Metrology.

We act with a sense of urgency to our customer needs, are innovative in our product development and are responsive to our ever-changing industry.

Founded in 1994 by Dr. Charles Ume of the Georgia Institute of Technology, Akrometrix is the leader in Capital Equipment and Test Services for Thermal Warpage and Strain Metrology.

Headquartered in Atlanta, Georgia, with Sales & Service in more than 20 countries worldwide.

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