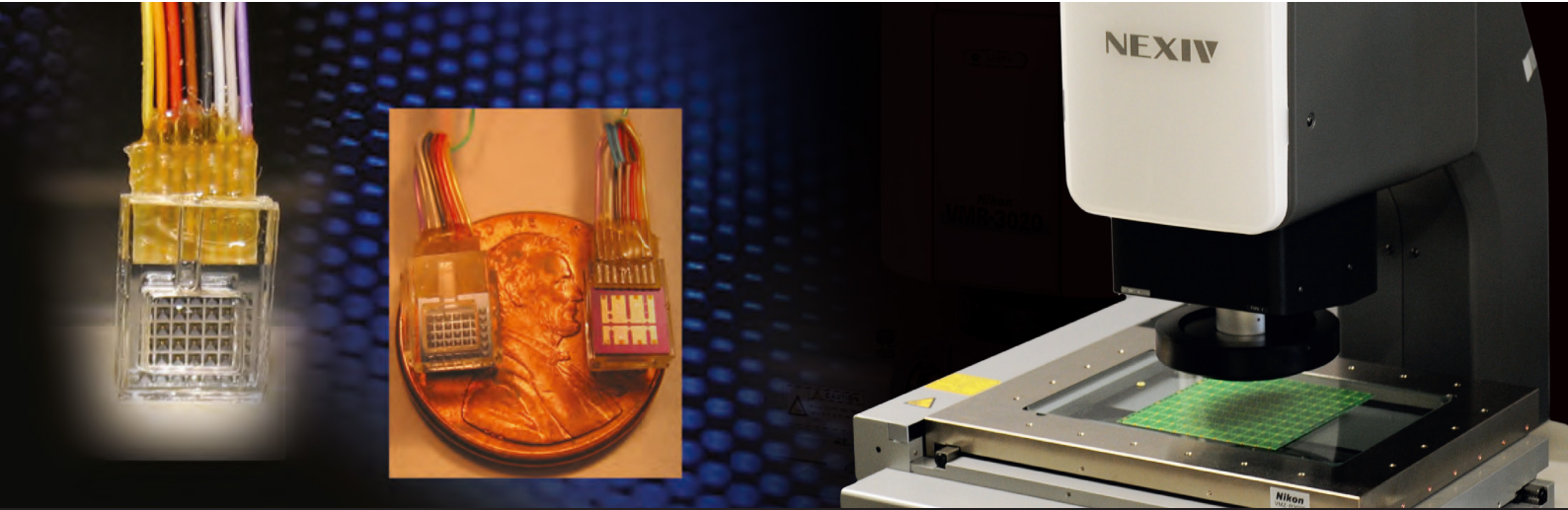




# ApplicationFocus

## Medical MEMS



# Inspection and measurement of Medical MEMS

A Medical MEMS (Micro-Electro Mechanical System) is a miniature implantable device that can have built in wireless data interrogation technology, custom electronics and a telemetry antenna. These implantable devices are used to continuously monitor health issues like blood pressure or blood analysis, providing data to remote locations. Micron-sized pressure transducers are also used for disposable blood pressure sensors.

Approximately 1 million intrauterine pressure sensors have been used to monitor pressure around an infant's head during delivery incorporating these micron-sized transducers. About 500,000 disposable angioplasty devices using these transducers to monitor pressure in balloon catheters, are sold each year. Medical MEMS require a full 100 percent inspection.

## System Challenge

Inspection of Medical MEMS can be extremely difficult for the following reasons:

- Their small sizes require high magnification to visualize all the features
- Small size also causes a problem with both tooling fixtures and part measurement
- Documenting images of failures in these products has been difficult and time consuming
- Both low and high magnification to find part features and perform the inspection are required
- Many of these samples are very difficult to image due to poor illumination methods in the past

## Nikon's Solution

### NEXIV VMZ-R3020 Vision Systems with Automeasure Software

- Three zoom systems provide progressively higher magnification and N.A.'s
- The precise high speed video autofocus snaps parts into sharp focus for rapid and accurate measurements
- Programmable lighting provides diascopic, through-the-lens, and a mobile large LED ring light set for excellent illumination
- Ability to rotate parts in any direction and still complete part inspection
- "Image Capture" that saves either a Bitmap or Tiff image of a part or feature
- Software intelligent enough to take and store images only of failures as required.

For more information, go to [www.nikonmetrology.com](http://www.nikonmetrology.com) or email [sales.nm@nikon.com](mailto:sales.nm@nikon.com)

CNC Video Measuring Systems

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