



Greetings!

Got a micro-motion problem? Get it solved! Meet the experts in *precision, embedded micro-motion systems* at Photonics West and BiOS in San Francisco January 28 - February 2, 2017. Stop by our booth or [contact us to schedule a meeting](#).

Micro-Motion Problems Solved

Meet the Experts at BiOS/Photonics West



David Henderson, CEO
Inventor of the SQUIGGLE motor and M3 embedded motion modules. More than 30 years of experience in piezo motion, engineering and product development.



Daniele Piazza, PhD, VP Engineering
Co-inventor of the reduced-voltage SQUIGGLE motor and UTAF piezo motor. More than 15 years of experience with piezo technology and motion systems design.

New Scale Technologies' lead inventors and motion system engineers will be at the SPIE BiOS and Photonics West events in San Francisco this month.

Here is your chance to enjoy a free half-hour consultation on your micro-motion problem, with engineers who are experts in the field. We have decades of experience creating innovative piezoelectric motors and putting them to work in smaller, smarter electro-mechanical system designs.

To make the most of your visit, we recommend that you [contact us to schedule a meeting at BiOS or Photonics West](#).

Embedded Motion Matters

Did you know that only New Scale Technologies has piezo stages that run on **3.3V input?**

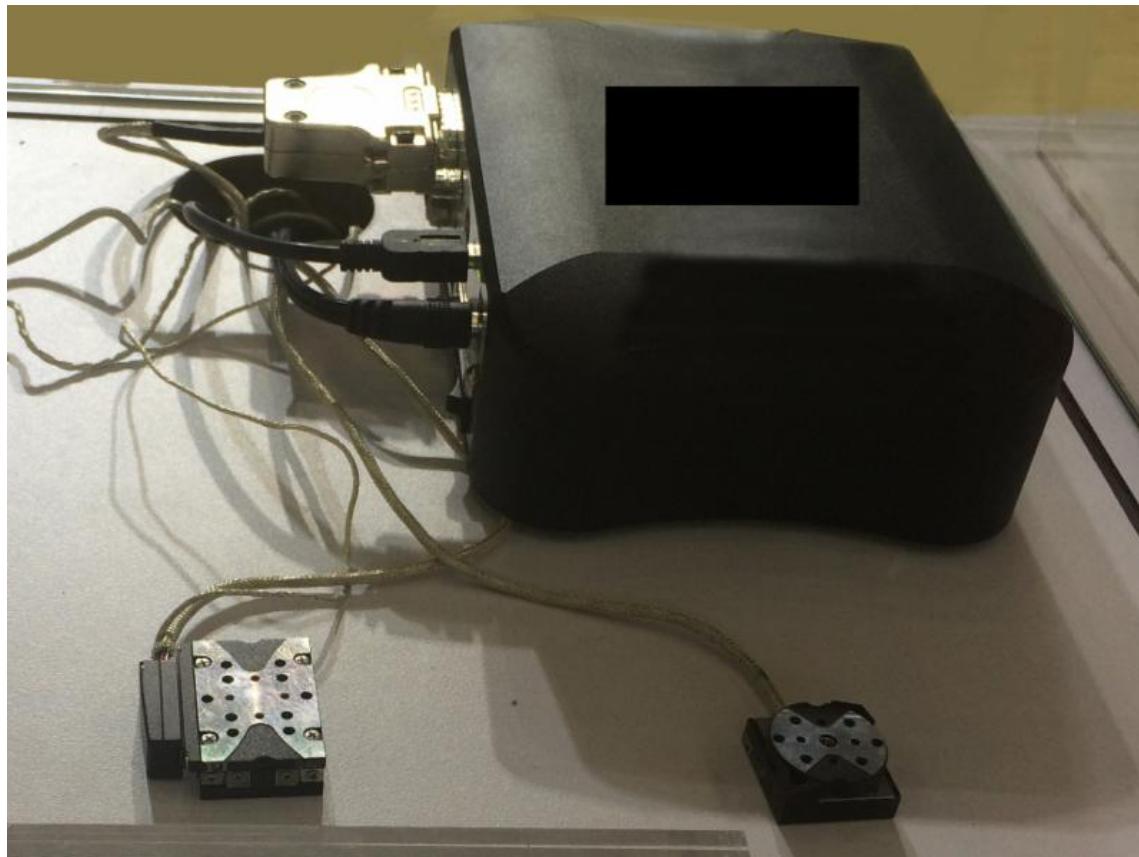
And that only New Scale has "smart modules" - piezo motion systems with **all control electronics integrated** into the tiny stage itself?

This means when you visit our booth at BiOS or Photonics West you will see this:



New Scale Technologies: Miniature motion module with embedded controller **INSIDE**

... NOT this:



The other guys: Commercial piezo stages with external controller (at recent trade show).

New Scale's M3 Modules with embedded controller take input commands *directly* from your PC or your system processor. They are small, precise and smart.



See what's inside an M3 module
[Watch the video \(0:55\)](#)

An M3 Smart Module has everything you need built right in: A SQUIGGLE piezoelectric micro motor or UTAF ultra-thin actuator, a motor driver ASIC, a position sensor, an on-board microprocessor with firmware for closed-loop motion control, and a standard or customized motion guide assembly and housing to suit your application.

An M3 Smart Module is the smallest, easiest-to-integrate motion solution and ensures your fastest time to market.

PHOTONICS spectra May 2012

Advances in Micromechatronics Promote All-in-One Positioning Modules

Smart motion technologies can reduce system size and simplify integration, enabling smaller photonic instruments with full performance.

By David Hirschberg, New Scale Technologies

Weara Progress

Advances in micromechatronics, miniaturization, and microsystems are revolutionizing a range of applications. "Smart" positioning modules for photonics instruments are one example. These are now becoming more common from the mobile phone industry demands to push tiny sensors and actuators into ever-tightening spaces. How these wear micro-robotic capabilities are being used to make these instruments faster, smaller, and more accurate is the focus of this article.

The article highlights the benefits of using a piezoelectric actuator instead of a standard stepper motor. Piezoelectric actuators offer higher resolution and better performance than standard stepper motors. They also offer advantages in terms of cost, reliability, and power consumption.

Other special requirements include very low noise and vibration levels, as well as programmable force regulation that enable the highly varied needs of the market. The benefits are particularly great for medical and scientific instruments that require high precision and reliability.

Positioning modules are used in many applications. One example is the use of a piezoelectric actuator in a medical device. This device has a resolution of only 1.1 - 1.8 - 1.9 nm. The actuator is used to move a probe that is used to measure the heart rate of a patient. The probe is held by a robotic arm that moves it across the heart. The actuator is used to move the probe in a precise and controlled manner, allowing for accurate measurements.

Each actuator requires drive electronics, which are typically integrated into the same component as circuit boards that are usually much larger than the actuators themselves.

48 Photonics Spectra, May 2012 www.photonics.com

Read how it's done
[Download the technical article \(PDF\).](#)

Standard or Custom? Yes, Both!



Standard Products.

See our range of standard M3 motion modules on display at Photonics West. All have integrated controllers, for the smallest size and absolute easiest integration into your OEM product. Manufactured by the thousands in the USA. [Browse standard M3 modules.](#)



Custom Solutions.

We are uniquely able to offer you a custom solution when you need it. We give you unsurpassed expertise and a flexibility that you won't get from bigger companies. We listen to your ideas, offer suggestions, and deliver fast and affordable feasibility studies. Custom development is fast and focused on your needs. [Learn more about our custom engineering.](#)

See us at these upcoming events

Schedule a meeting

SPIE BiOS Expo

Saturday-Sunday | January 28-29

San Francisco, CA

Booth 8430

[BiOS floor plan](#) (uses Adobe Flash player)



The world's largest biomedical optics and biophotonics exhibition. BiOS Expo, held Saturday and Sunday, kicks off the Photonics West week. Find the latest technologies from more than 200 companies in the thriving biomedical optics and photonics industries.

SPIE Photonics West

Tuesday-Thursday | January 31 - February 2

San Francisco, CA

Booth 627

[Photonics West floor plan](#) (uses Adobe Flash player)



The world's largest multidisciplinary event focusing on photonics technologies. Every year over 20,000 people come to hear the latest research and find the latest devices and systems driving technology markets including state-of-the art medical technologies, the Internet of things, smart manufacturing and "Industry 4.0," autonomous vehicles, scientific research, communications, displays, and other solutions powered by photonics.



About Us

New Scale Technologies develops and manufactures the smallest and most precise closed-loop positioning solutions available. Our "all-in-one" M3 Smart Modules with built-in controllers are easy to integrate with handheld and portable instruments. We enable smaller, smarter imaging systems, scientific instruments, medical devices, aerospace and defense systems and more. Our customers achieve the fastest time to market with the lowest total cost. [Contact us](#).



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