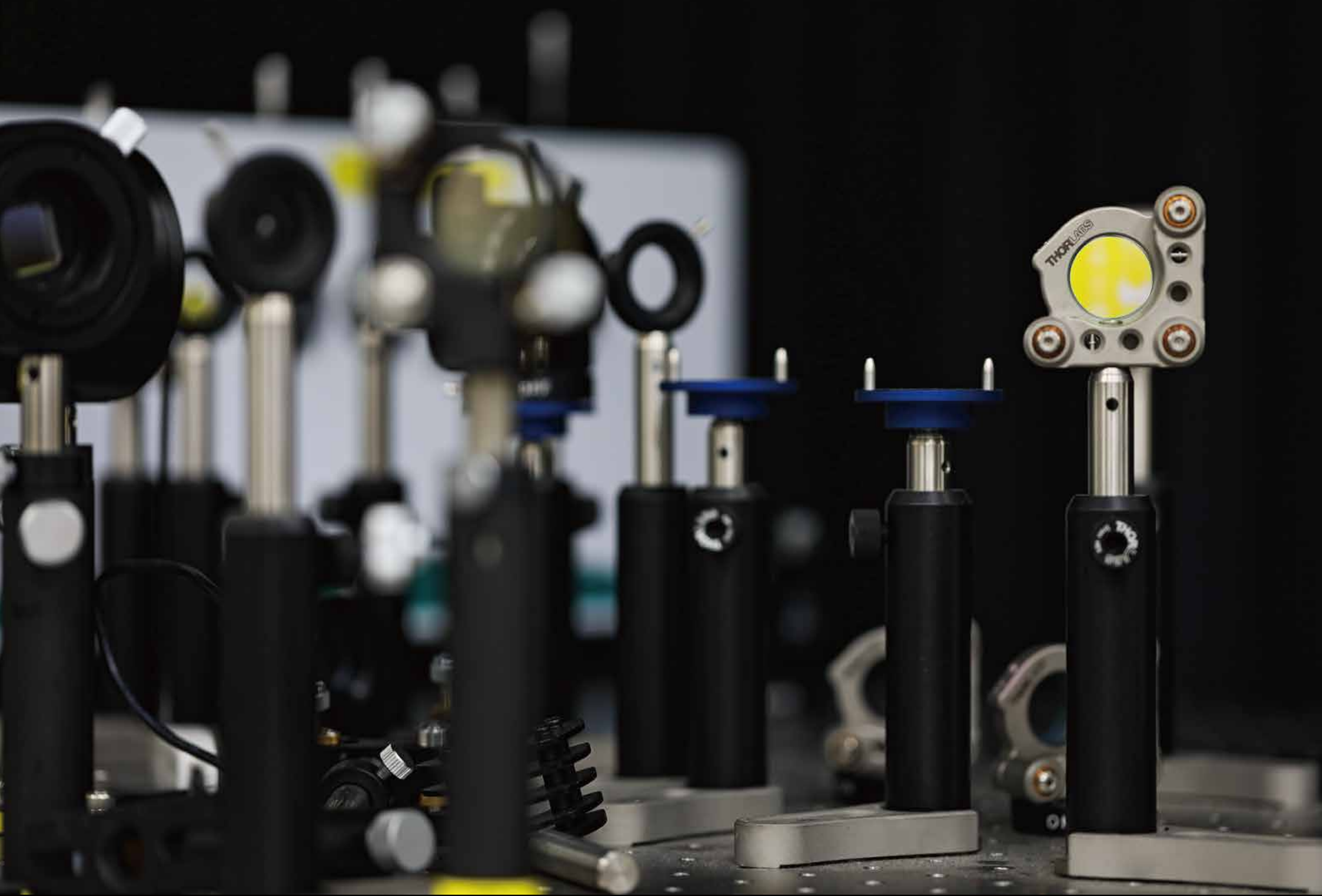


# The Evolving World of Ultra-Precision Machining

Machines used to make products are called "machine tools," and their precision has reached  $0.1 \text{ nm} = 1\text{\AA}$ . We use these "ultra-precision" machines to fabricate various products and devices. These include not only mechanical processing, but also laser processing and electrical discharge machining, which use physical phenomena such as light emission or electrical discharge. In addition to conventional "removal processing," we are also expanding into "Additive Manufacturing = 3D printing", in which shapes are created by "bottom-up process".



## Paradigm Shift to

# "Function Manufacturing"

The manufacturing revolution led by Nature

### Evolution of Plants or Animals, and New Functions

In the process of evolution, plants or animals have created microscopic three-dimensional structures on the surface of their own bodies and have succeeded in creating various "functions" such as "wettability" or "reducing resistance to fluids". This idea, called "biomimetics," has been applied to smartphones, aircraft wings and so on. We have teamed up with the surrounding "Nature" to conduct research that makes full use of all methods of ultra-precision machining and utilizes the unique functions they produce in manufacturing.

