NanoScale 2026

Helmholtz-Seminar 20334, NPL, Teddington, England, Oct. 20th-22nd, 2026

**87 participants from 19 countries with 66 scientific presentations,
6 inspiring keynote lectures, excursion and lab tours**



With 87 registered participants, plus additional scientists from NPL who dropped in for selected sessions, NanoScale 2026 at NPL turned out to be a great venue for nanometrologists and users in different fields of industry and academia. NanoScale 2026 brought together researchers from 13 European countries and 6 countries outside Europe (China, Japan, Thailand, Australia, South Africa, Canada), confirming NanoScale's significance as the leading nano- and micrometrology conference in Europe with global international participation. Apart from Germany and the United Kingdom, Poland and the Czech Republic were best represented.

The NanoScale 2026 programme comprised 32 oral presentations (among them 6 keynote lectures) and 34 posters, covering a broad range of topics from challenges of ultrasmooth surfaces via quantum and nanoscale standards, nanopositioning, advanced optical and X-ray nanoscale metrology, to novel sensors and instrumentation. A special session addressed the requirements of nanoscale metrology for advanced materials as well as, in turn, the application of advanced materials for nanoscale metrology. A digital Book of Abstracts (230 pages) was provided to the participants as pdf-file.

While Special Sessions on ongoing European projects used to be an essential contribution to some previous NanoScale conferences, this time a special focus was put on the future needs in metrology as voiced particularly by industry as key user. To stimulate the exchange on current and future trends and needs, six keynote speakers from different branches of industry and related

academia were invited to NanoScale 2026, including semiconductor industry, manufacturers and users (e. g. at synchroton facilities) of ultra-precision positioning systems as well as institutes and companies working on the sythesis and application of nanoparticles, complex nanocarriers as e. g. applied in medicine, and generally various advanced materials, as well as diagnostic strategies relying on nanometrological techniques.

It was generally appreciated that the conference provided ample time for discussions, the more so as the refreshments and lunch were served in the poster hall, stimulating mutual exchange not only in the poster sessions. The reception at the famous historical Bushy House of NPL on the first evening helped to get acquainted with each other and meet colleagues and friends again in a relaxed atmosphere.

The social highlight of this year's NanoScale was an excursion to Brooklands Motor Racing and Aviation Museum near Weybridge, where the first purpose-built racing circuit was opened in 1907. The museum hosts a unique exhibition of racing cars right from the early beginning to the present in the original premises. The NanoScale 2026 participants gathered amidth the historical racing cars. Apart from racing, Brooklands used to be the home of aviation: Starting in the pioneering phase in the early 20th century, aircrafts were built and tested here until 1987, among them components of the Concorde supersonic plane; the NanoScale attendees went onboard the Concorde that is on display at Brooklands. The NanoScale conference dinner took place in the historical club house of the Brooklands racing circuit. The prize of the Dr.-Ing. Siegfried Werth Foundation was awarded by Prof. Rainer Tutsch from TU Braunschweig to Jan Thiesler (PTB + TU Braunschweig) for his outstanding PhD thesis "A true 3D-AFM head".

In addition, Andrew Yacoot (NPL) and Harald Bosse (PTB) were honoured for their achievements in nanometrology and supporting the NanoScale series of conferences right from the conference's beginnings 25 years ago until today.

The conference concluded with optional lab tours: NanoScale attendees visited the NPL labs for the metre realisation, the Kibble balance, X-ray interferometry, AFM and surface texture. A coffee break in the scientific museum of NPL – located within Bushy House – gave insight into the history of the development of units Metre Convention vs. including metric and imperial units and measurement technology.

As with previous NanoScale conferences, the proceedings are planned to be published as full, peer-reviewed articles in a *Focus Selection* of Measurement Science and Technology (MST). zu veröffentlichen. Authors are invited to submit their manuscripts for review via the *Landing Page of the NanoScale 2026 Focus Selection* on the MST website by early 2027. It is anticipated that the Focus Selection will be completed by early 2028. All articles will be listed and linked on this landing page.

NanoScale 2026 was organized by a team led by Gaoliang Dai and Thorsten Dziomba (PTB) in collaboration with Andrew Yacoot's team (NPL), with support from the Helmholtz Fund (Seminar 20334) and EURAMET TC-L (permanent project 1342). The event was integrated into a "Length Metrology Week" at NPL, which included meetings of the BIPM CC-Length working groups in the days surrounding the NanoScale conference.

As things currently stand, the next NanoScale conference is expected to take place in 2029.

