

# HIGH-QUALITY NETWORK FOR MICROSCOPIC FIBERS

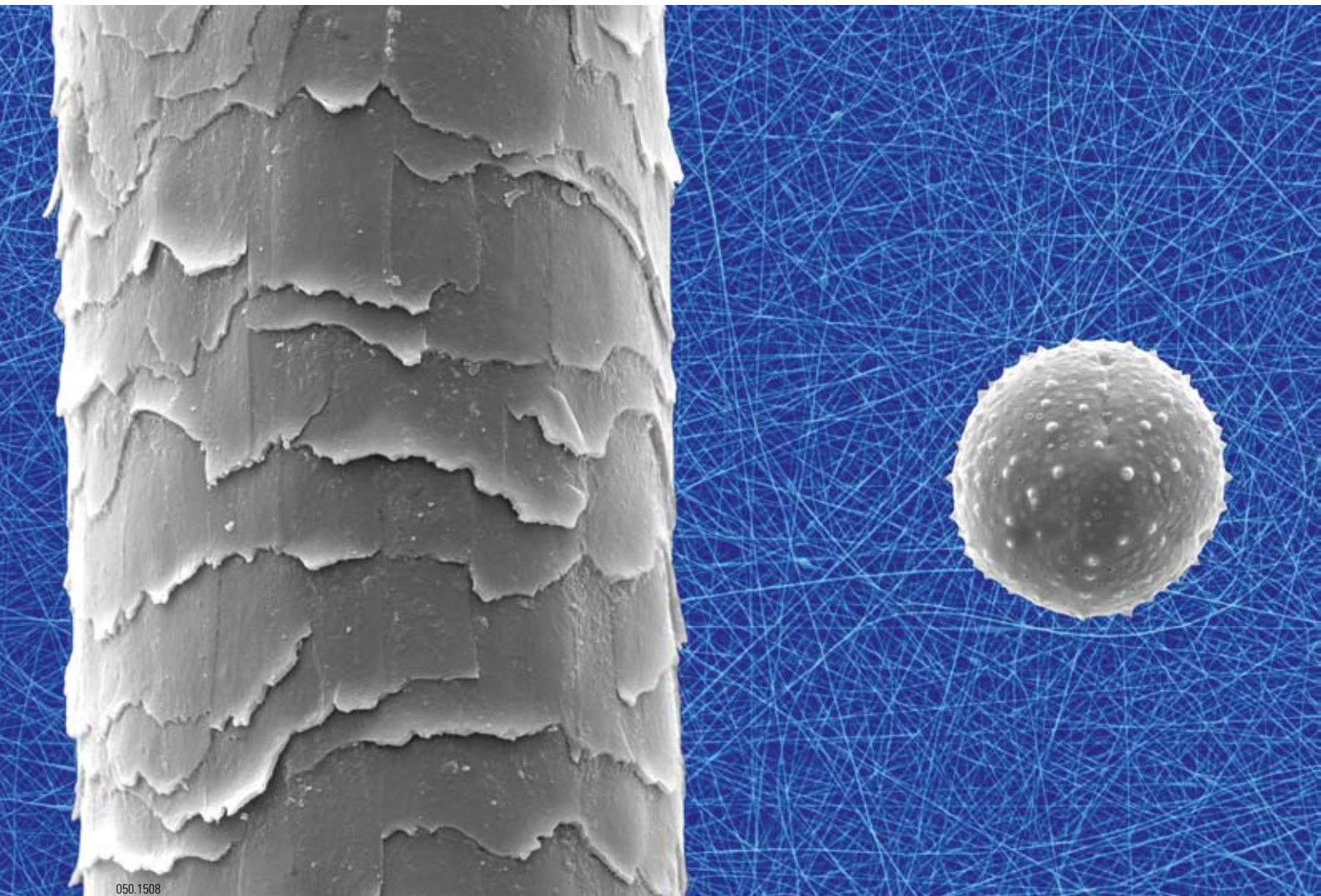
In the city of Liberec in the Czech Republic a development and production center is currently under construction for an exciting class of material of the future: nanofibers. R&M is delivering a network for the plant that more than meets the stringent safety requirements for industrial production.

Liberec, or Reichenberg as it is also known, situated in the north of the Czech Republic, is a town steeped in history. From the 16<sup>th</sup> century it developed into a significant center for weaving.

From its artisan origins it later devoted itself to commercial and industrial textile manufacturing, a sector that helped the city to become prosperous and famous.

Today, at the beginning of the third millennium, Liberec is once again causing a sensation with fibers; but with fibers that are not even visible under an optical microscope as their diameter is less than that of the wavelength of light. These are known as nanofibers, a material that is deemed to have a very promising future. Whether in medicine, filter industry, construction, automobile industry or other industrial sectors, there are numerous applications for material made from these unbelievably thin fibers (approx. 2 to 5 ten-thousandths of a millimeter).

Today, Elmarco is still the only company in the world that manufactures and markets machines for the industrial production of nanofibers. These machines are referred to as nanospiders and



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The world of  $10^{-9}$  where human hair and fine dust represent a giant object compared to the nanofibers.



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New ELMARCO building covered by the first snow of the winter season 2008/2009.

use electrospinning technology to generate the innovative fibers. However, Elmarco not only provides the machines but also manufactures and markets the corresponding products under the brand names Nanospider AcousticWeb™ and Nanospider Antimicrobe-Web™.

Currently, Elmarco is constructing a number of new company buildings comprising an administration center, a manufacturing plant, a training center and a development laboratory. The company is working closely with R&M on the cabling for the entire complex as the campus is to be equipped with 2333 connection points for the R&Mfreenet Real10 program. Shielded Cat. 6 cabling providing Class E<sub>A</sub> performance and single mode fiber optic backbones belonging to the R&Mfreenet Vision System are being used for data transmission. The cabling system was planned by IBM in the Czech Republic; responsibility for the installation has been placed in the hands of the certified R&M partner oaza-net.

The first building on the campus, the laboratory, was completed at the end of 2008. This was a building that placed especially high demands on network security and on the protection of components from outside influences. For challenging areas of this nature, R&M, with its comprehensive security system and con-

nection modules developed especially for industrial use, was able to come up with an appropriate solution taken from its program. This means that fast and secure data transmission up to protection class IP67 is catered for. Thus Elmarco has been put on a sound footing in its quest to further expand the development and production of the ground-breaking nanofiber technology.



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