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Uwe B. Sleytr, studied Food and Biotechnology in Vienna. He worked as senior research scientist at the MRC-Laboratory for Molecular Biology and the Strangeways Research Laboratory, Cambridge, England (1972-1975), and as visiting professor at the Department of Microbiology and Immunology, Temple University, Philadelphia, USA (1977-1978). From 1982-2010 he was head of the Department of NanoBiotechnology (former Center for Ultrastructure Research) University of Natural Resources and Life Sciences, Vienna, Austria. He received numerous awards and is a Full Member of the Austrian Academy of Sciences and the European Academy of Sciences and Arts. He has Honorary Professor Appointments at Sichuan University, Chengdu, China, China University of Petroleum, Qingdao, Shandong China, and the Shanghai Jiao Tong University, China. He is a Fellow of the American Institute for Medical and Biological Engineering. 420 publications, 6 books, numerous international patents.

One of the key challenges in nanobiotechnology is the utilization of self-assembly systems, wherein molecules spontaneously associate into reproducible aggregates and supramolecular structures. In the contribution the basic principles of crystalline bacterial surface layers (S-layers) and their use as patterning elements will be described. The broad application potential of S-layers in nanobiotechnology is based on the specific intrinsic features of the monomolecular arrays composed of identical protein or glycoprotein subunits. Most important physicochemical properties and functional groups on the protein lattice are arranged in well-defined positions. Many applications of S-layers depend on the capability of isolated subunits to recrystallize into monomolecular arrays in suspension or on suitable surfaces (e.g. polymers, metals, silicon wafers) or interfaces (e.g. lipid films, liposomes, emulsomes).S-layers also represent a unique structural basis and patterning element for generating more complex supramolecular structures involving all major classes of biological molecules Thus, S-layers fulfil key requirements as building blocks for the production of new supramolecular materials and nanoscale devices as required in nanobiotechnology and synthetic biology.

In the second part of the presentation I will describe how my scientific activities stimulated my art work, which in particular concerns the visualization of results and the potential of synthetic biology and evolutionary events induced by genetic manipulations. Most importantly, the engagement in art allowed me to leave the rather curtailed canon of science and reach a mental state of unlimited freedom of thoughts. Mask-like sculptures are used as example to visualize the intersection between science and art, and in particular the unpredictability and mystery of scientific visions.

Sleytr, U.B., B. Schuster, E.-M. Egelseer, D. Pum. 2014. S–layers: principles and application. *FEMS Microbio. Rev*. 38:823-864.
Sleytr, U.B. 2016. *Curiosity and Passion for Science and Art*. World Scientific. ISBN 9813141816