

In recent years, researchers have been working on the production of different types of nano-adhesives that can bond two different materials and, in principle, turn them into one. They will now develop one that can be dissolved again. In both cases, these are laboratory inventions that can be very important for industry.

Super valves for food companies

A new chemical substance can help industry with super valves in which rubber coatings remain intact and thereby prevent the gathering of dirt and bacteria. A new chemical compound that can bond rubber to metal can be the solution to problems for the food and water industries with process plants that collect dirt and bacteria in their valves.

In any case, researchers have come up with different types of adhesives or nanoglue, and the chemistry appears to be very promising if it can be implemented in an industrial context, according to Associate Professor Mogens Hinge.

"Valves in large production plants for water and food supplies are hard to clean and maintain, and they therefore need to be replaced very frequently. This happens when the rubber coating in the valve becomes loose so that it gradually loses its function and provides access to bacterial growth. Our concept is to use our knowledge about nanomaterials to develop new and more sterile valves with very long durability," he says.

The idea is to use a chemical nano-adhesive on the metal surface of the valve, which bonds to the rubber coating when it hardens. From a chemical point of view, the valve becomes one single piece, which means bacteria are unable to penetrate.

Associate Professor Hinge and his colleagues have already taken out a patent on a similar chemical binder that can join materials such as plexiglass and steel. A superglue that bonds rubber to metal can solve problems in the food industry where leaky valves in the process plants gather bacteria. Professor Mogens Hinge is the main architect behind the new nanomaterial and co-founder of the spin-off company Radisurf.



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