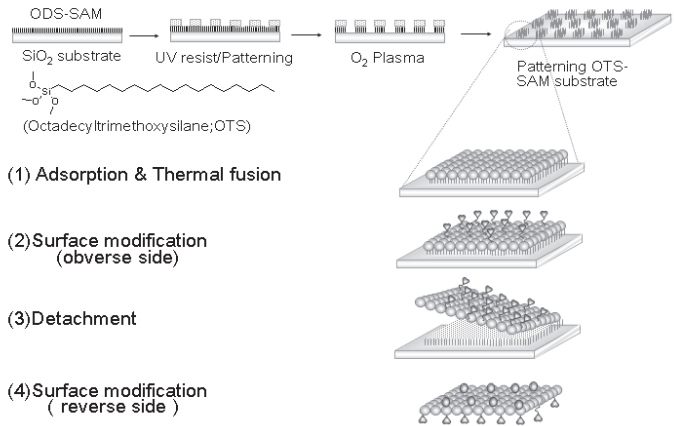


S. Takeoka, T. Fujie, Y. Okamura. *Novel polymeric nanosheets for gerontic applications. Gerontechnology 2008; 7(2):220.* A polymeric nanosheet is a biocompatible sheet with nanometer thickness; for instance, one side is adhesive to skin or tissues and the other side provides a platform for various applications¹. We are proposing two kinds of polymeric nanosheets; one is a nanosheet prepared by thermal fusion of biodegradable PLGA nanoparticles adsorbed on the micropattern, and the other is a nanosheet with square centimeters size prepared by a layer-by-layer (LbL) technology with anionic and cationic polysaccharides. These nanosheets on the substrate were detached from the substrate in the treatment with sacrificial layers to provide the dispersion of the free-standing nanosheets. The microscale nanosheets would be applicable to cure sclerosis or thrombosis because they have a recognition moiety for activated platelets. In the second type, we have demonstrated transference of the nanosheet from the silicone rubber substrate onto a skin surface or tissues. The invisible nanosheet on the skin or tissue will have obvious applications in the fields of skin-care or surgery. We are currently investigating the physical and optical properties of the nanosheets such as mechanical strength, structural colorization, biocompatibility and biodegradability and exploring gerontological applications.

Reference

1. Fujie T, Okamura Y, Takeoka *Advances in Materials* 2007;19:3549-3553

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Scheme 1. Preparation of free-standing nanosheets with hetro-modification.

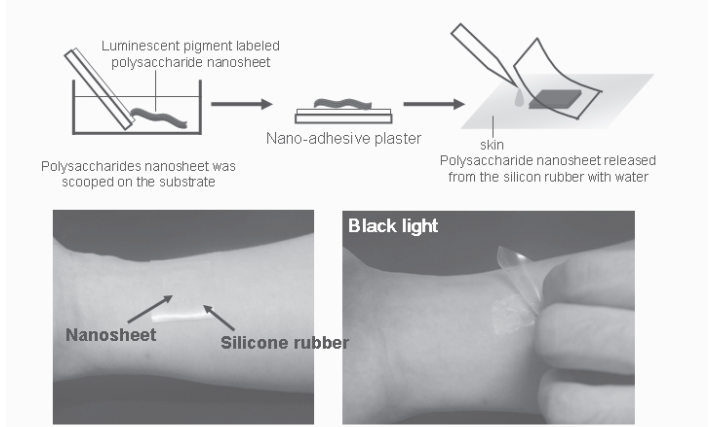


Figure 2. A nano-adhesive plaster on the human skin before and after release from the silicone rubber.