

Enabling Hydrogel Coating on Silicone Breast Implants with Poly(Vinyl Acetate) Primer Layer

Katrin Stanger^{a,†}, Dardan Bajrami^{b,c,†}, Peter Wahl^{d,e}, Fintan Moriarty^f, Emanuel Gautier^{g,h}, Alex Dommannⁱ, Kongchang Wei^{b,j,*}

a) Cantonal Hospital Winterthur, Division of Plastic and Hand Surgery, Winterthur, Switzerland

b) Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Biomimetic Membranes and Textiles, Lerchenfeldstrasse 5, 9014 St. Gallen, Switzerland

c) ZHAW School of Engineering, Technikumstrasse 71, Winterthur, Switzerland

d) Cantonal Hospital Winterthur, Division of Orthopaedics and Traumatology, Winterthur, Switzerland

e) University of Bern, Faculty of Medicine, Bern, Switzerland

f) AO Research Institute Davos, Davos, Switzerland

g) HFR Fribourg – Cantonal Hospital, Department of Orthopaedics, Fribourg, Switzerland

h) OrthoTrauma Foundation, Fribourg, Switzerland

i) University of Bern, ARTORG Center for Biomedical Engineering Research, Bern, Switzerland

j) Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Biointerfaces, Lerchenfeldstrasse 5, 9014 St. Gallen, Switzerland

Direct hydrogel coating on implant without pre-treatment

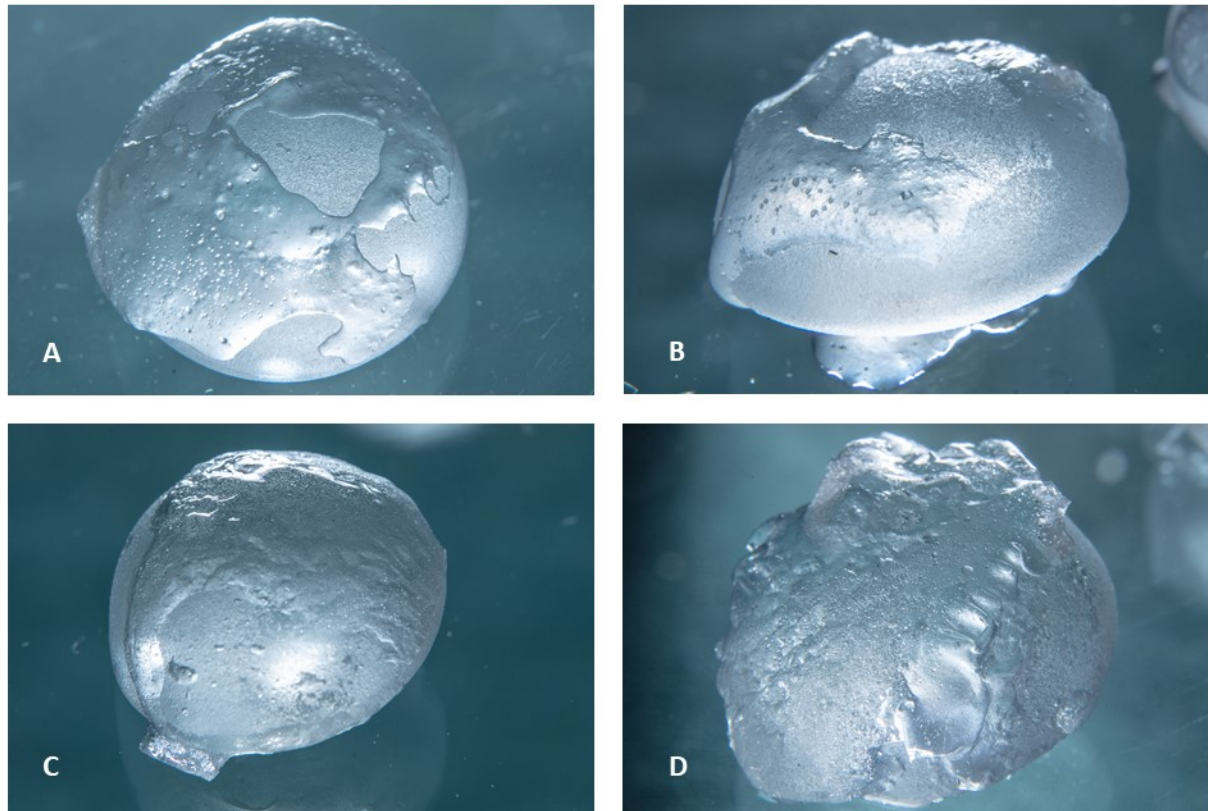


Figure S1: Silicone implants coated directly with hydrogel. Image A and B: The same silicone implant coated with DAC hydrogel, before (A) and after addition of two drops of NaCl 0,9% (B). Image C and D: Another silicone implant, coated with Coseal hydrogel, before (C) and after addition two drops of NaCl 0,9% (D). Hydration was performed to simulate physiologic surroundings.

Step-by-step PVAc priming and surface structure changes

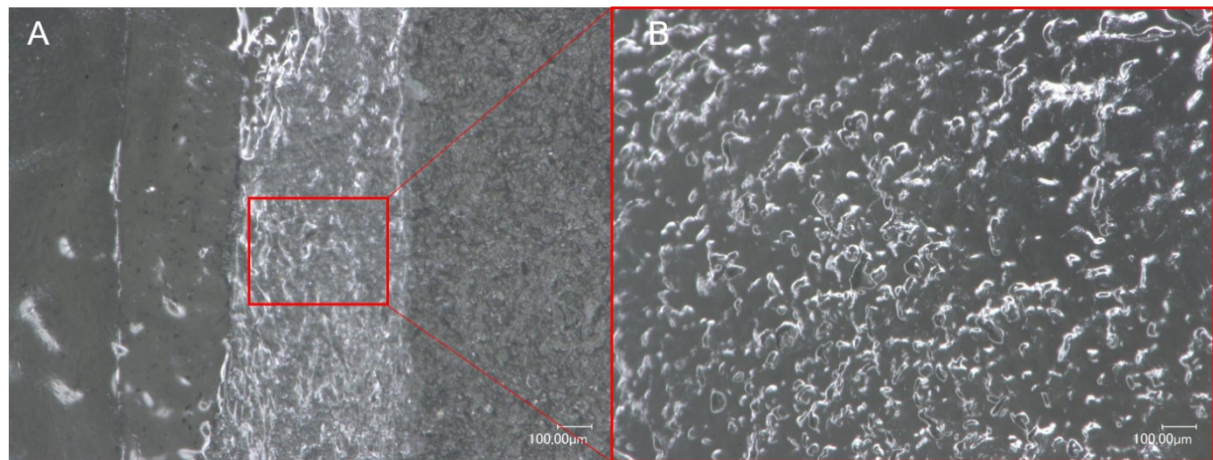


Figure S2: PVAc primer layer coated on silicone implant. Image A: Section of silicone implant coated with three (left), one (middle), no (right) PVAc priming layer. Image B: Close-up of the one-time coated section. Coating the implant only once leads to insufficient coating and leads to exposure of rough silicone surface structure.

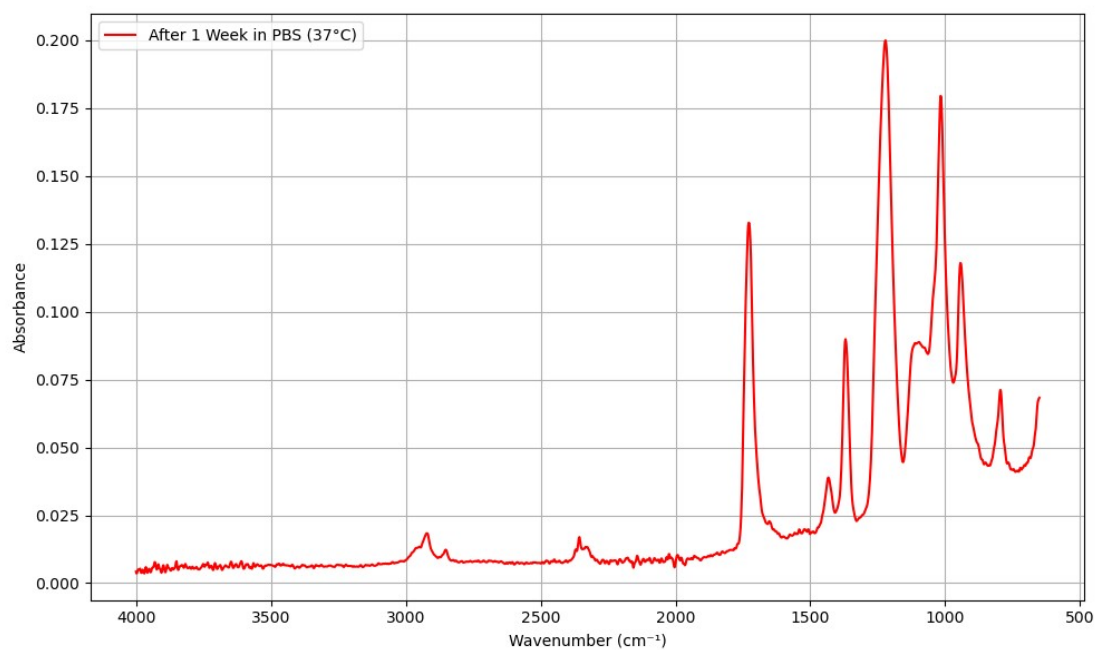


Figure S3: FTIR of PVAc primer layer after soaking in PBS (37 °) for 7 days.