

Supporting information

Design of a Tribotester based on Non-Contact Displacement Measurements

Chang-Lae Kim and Yoon-Gyung Sung*

Department of Mechanical Engineering, Chosun University, Gwangju 61452, Korea; kimcl@chosun.ac.kr

* Correspondence: sungyg@chosun.ac.kr; Tel.: +82-62-230-7181

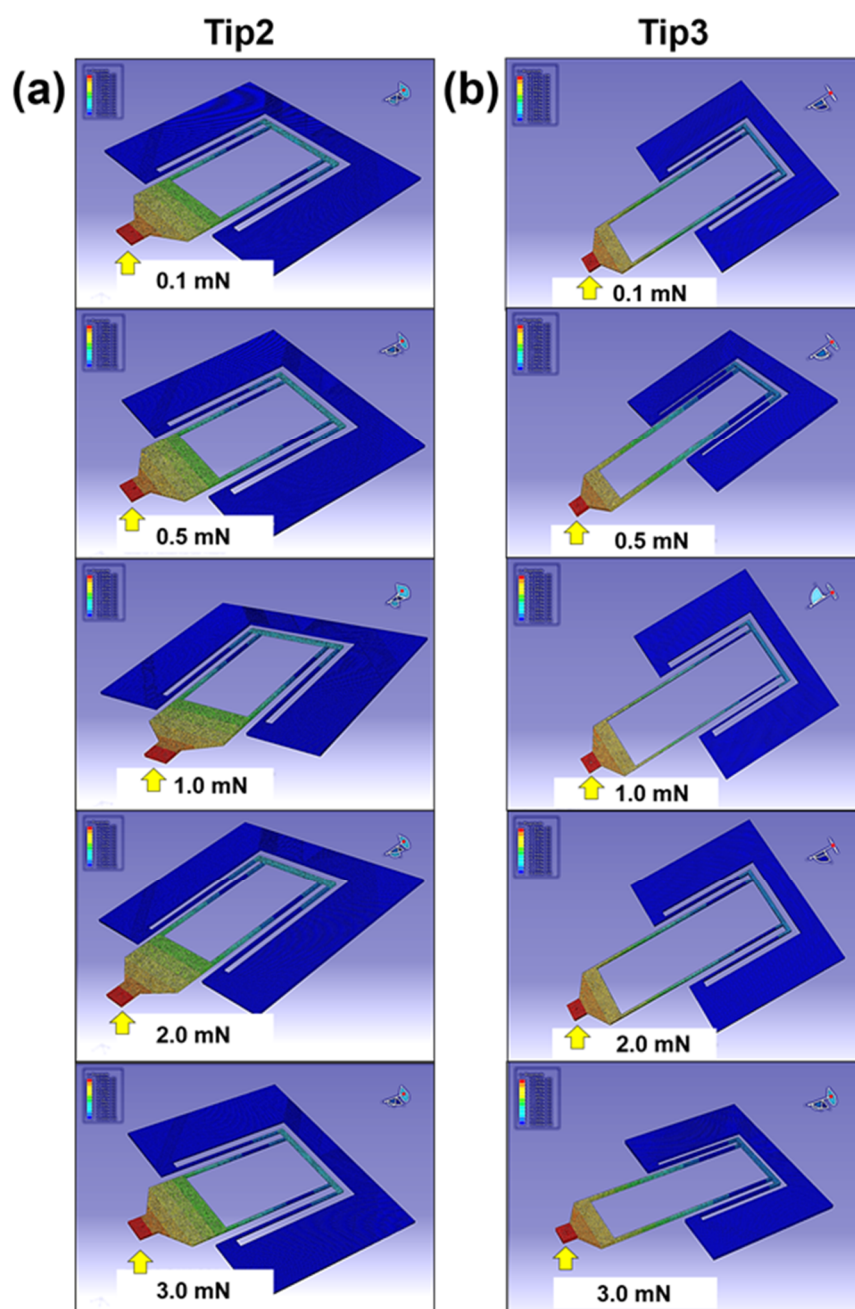


Figure S1. Displacement results for (a) Tip 2 and (b) Tip 3 depending on the normal forces (0.1, 0.5, 1.0, 2.0, and 3.0 mN) based on FEA simulations.

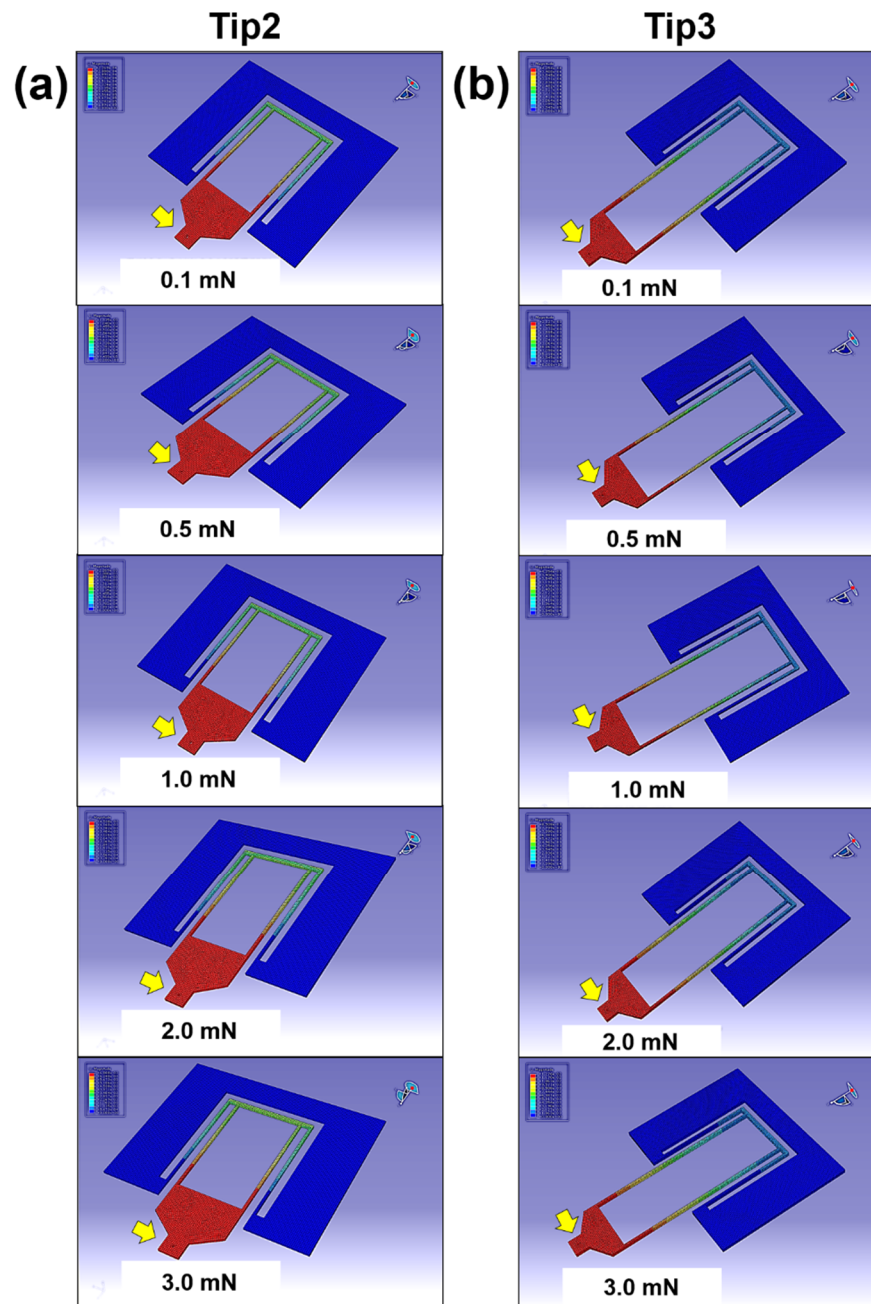


Figure S2. Displacement results for (a) Tip 2 and (b) Tip 3 depending on the friction forces (0.1, 0.5, 1.0, 2.0, and 3.0 mN) based on FEA simulations.

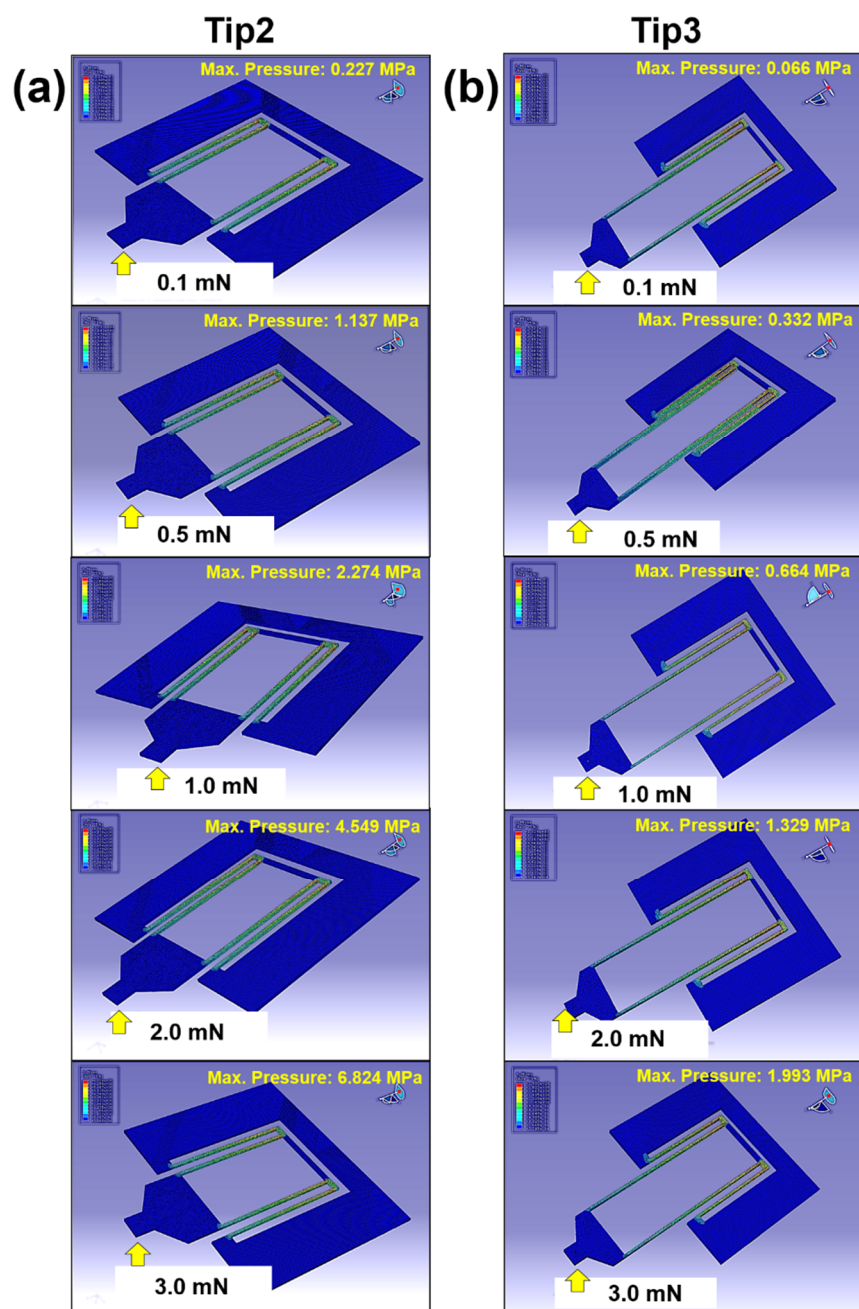


Figure S3. Pressure results for (a) Tip 2 and (b) Tip 3 depending on the normal forces (0.1, 0.5, 1.0, 2.0, and 3.0 mN) based on FEA simulations.

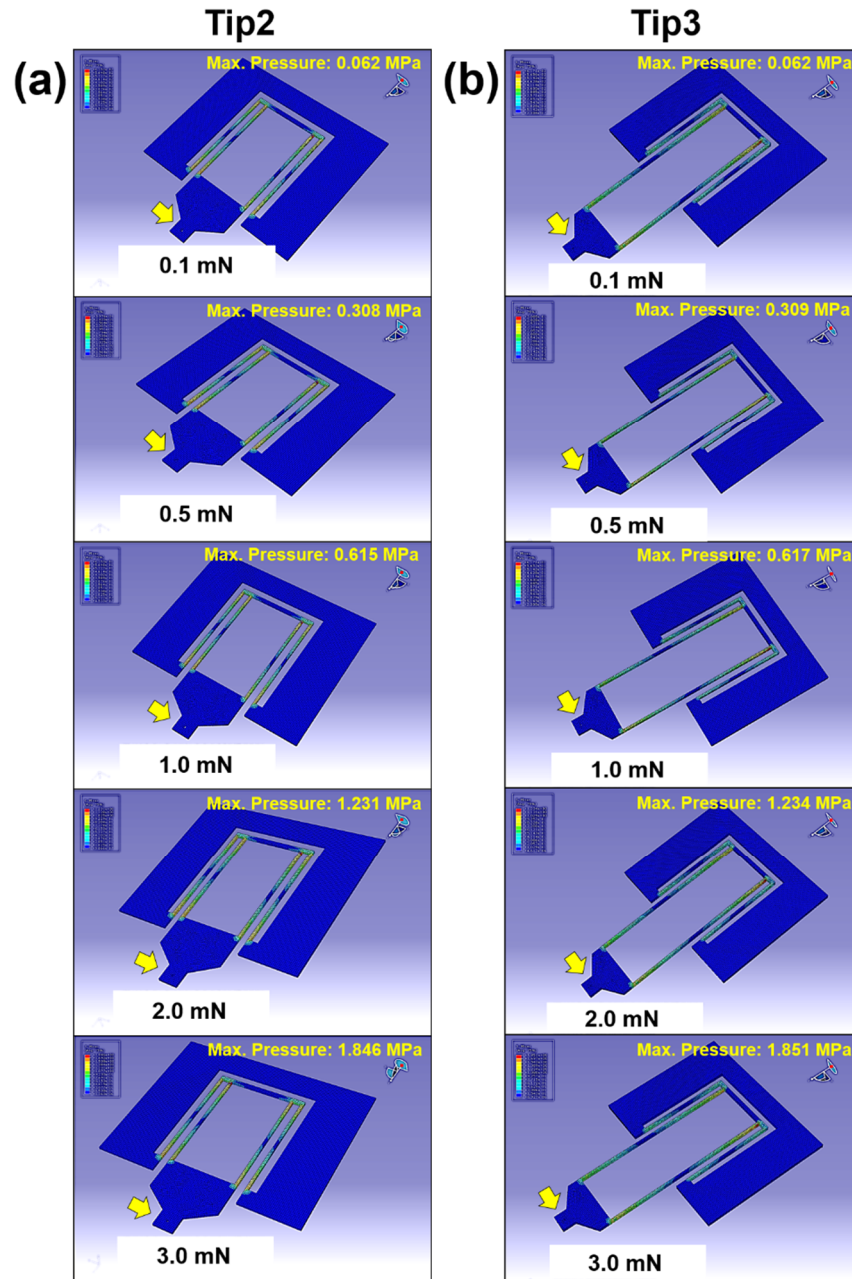


Figure S4. Pressure results for (a) Tip 2 and (b) Tip 3 depending on the friction forces (0.1, 0.5, 1.0, 2.0, and 3.0 mN) based on FEA simulations.

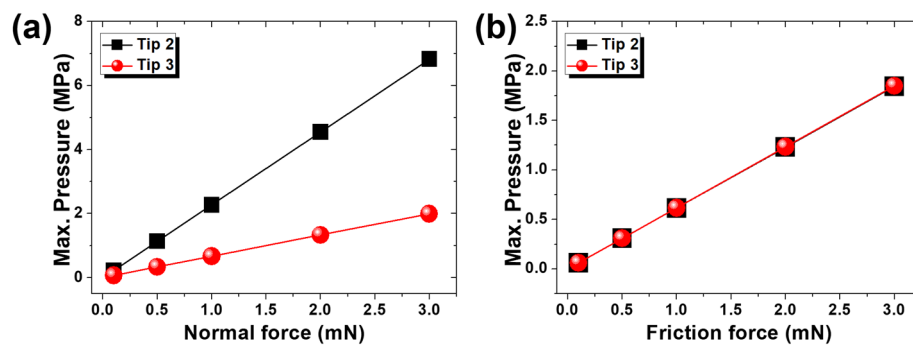


Figure S5. Pressure variations of Tip 2 and Tip 3 depending on the (a) normal forces and (b) friction forces, respectively (0.1, 0.5, 1.0, 2.0, and 3.0 mN).

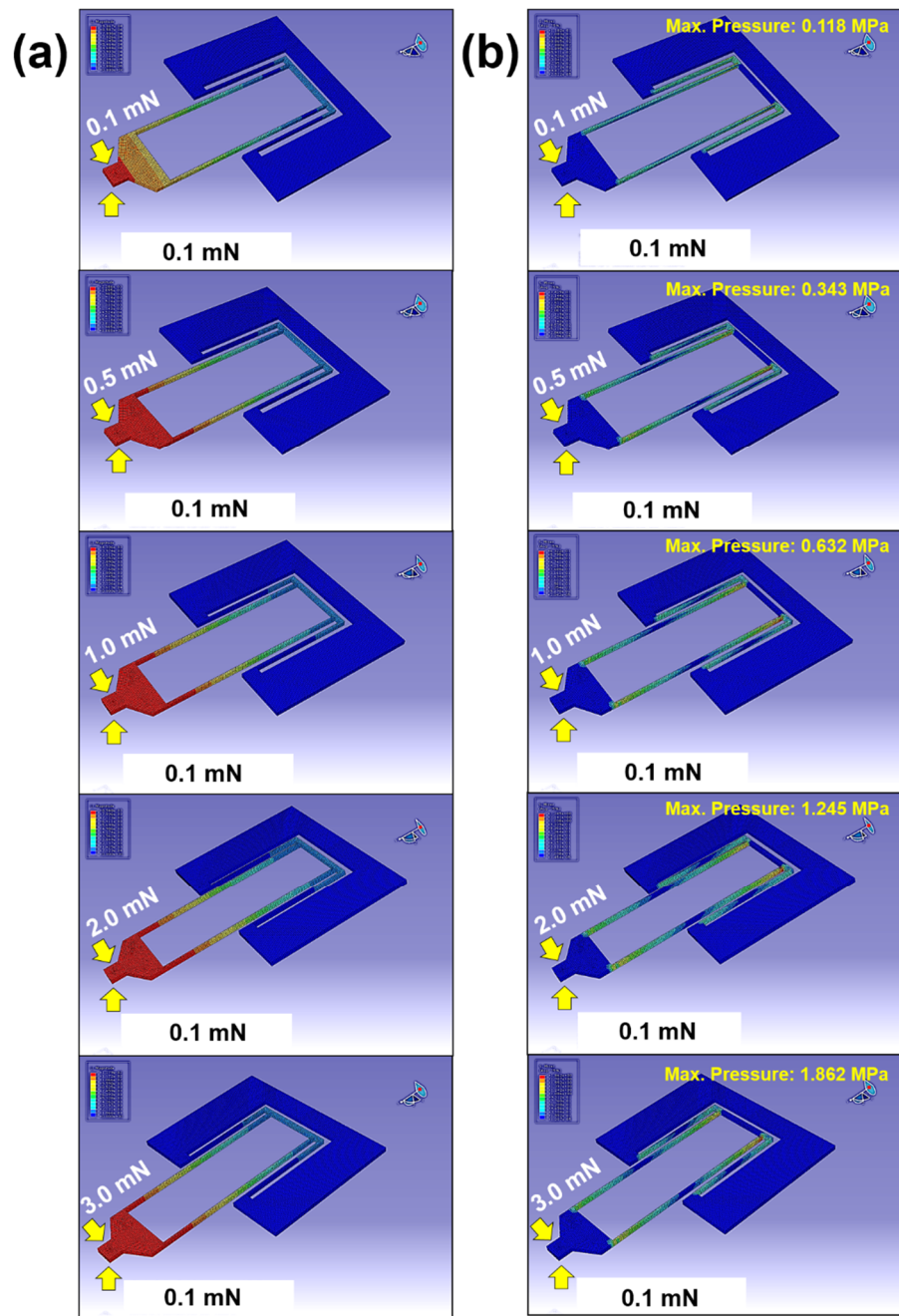


Figure S6. (a) Displacement and (b) pressure changes of Tip 3 depending on the friction force under a normal force of 0.1 mN.

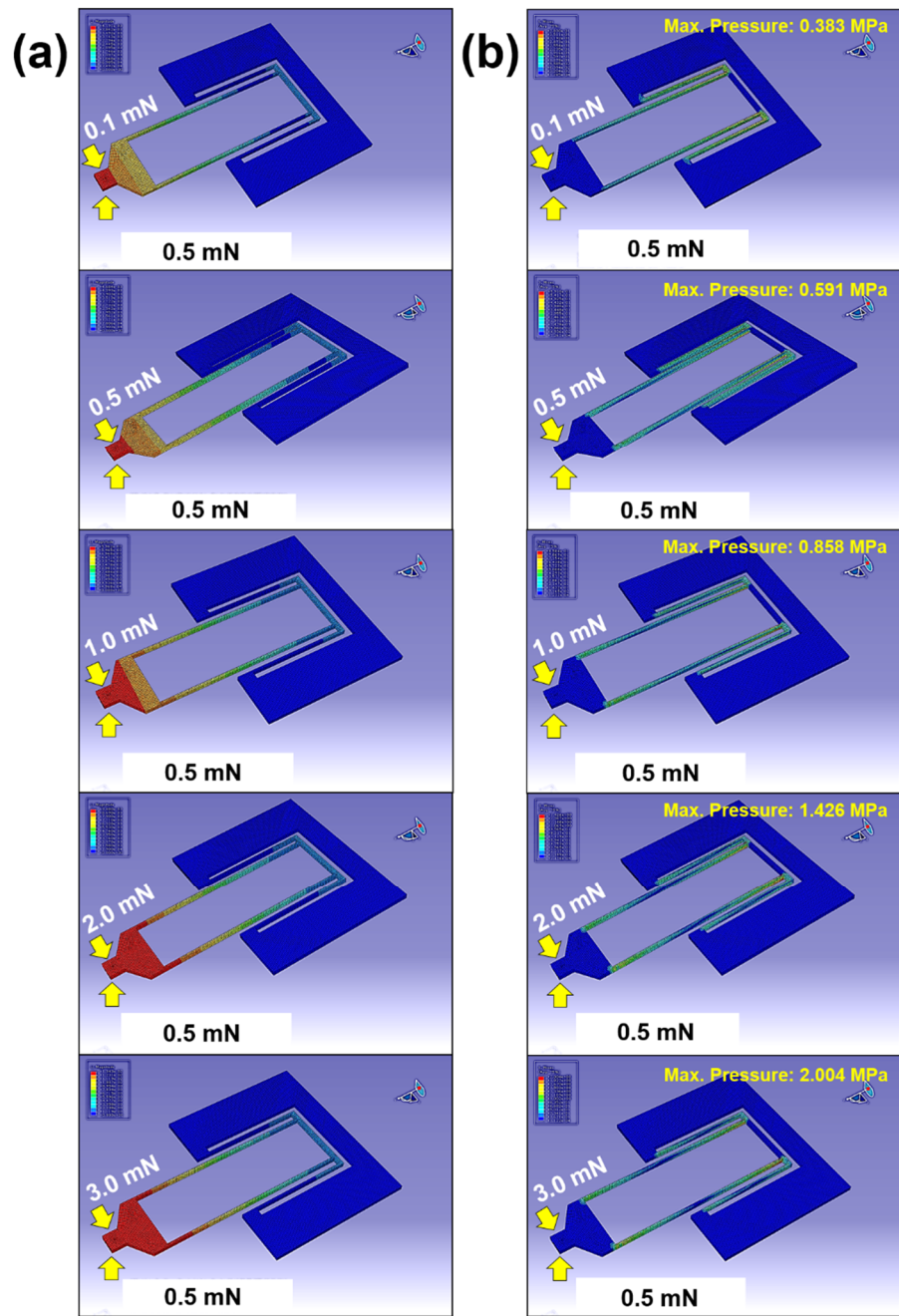


Figure S7. (a) Displacement and (b) pressure changes of Tip 3 depending on the friction force under a normal force of 0.5 mN.

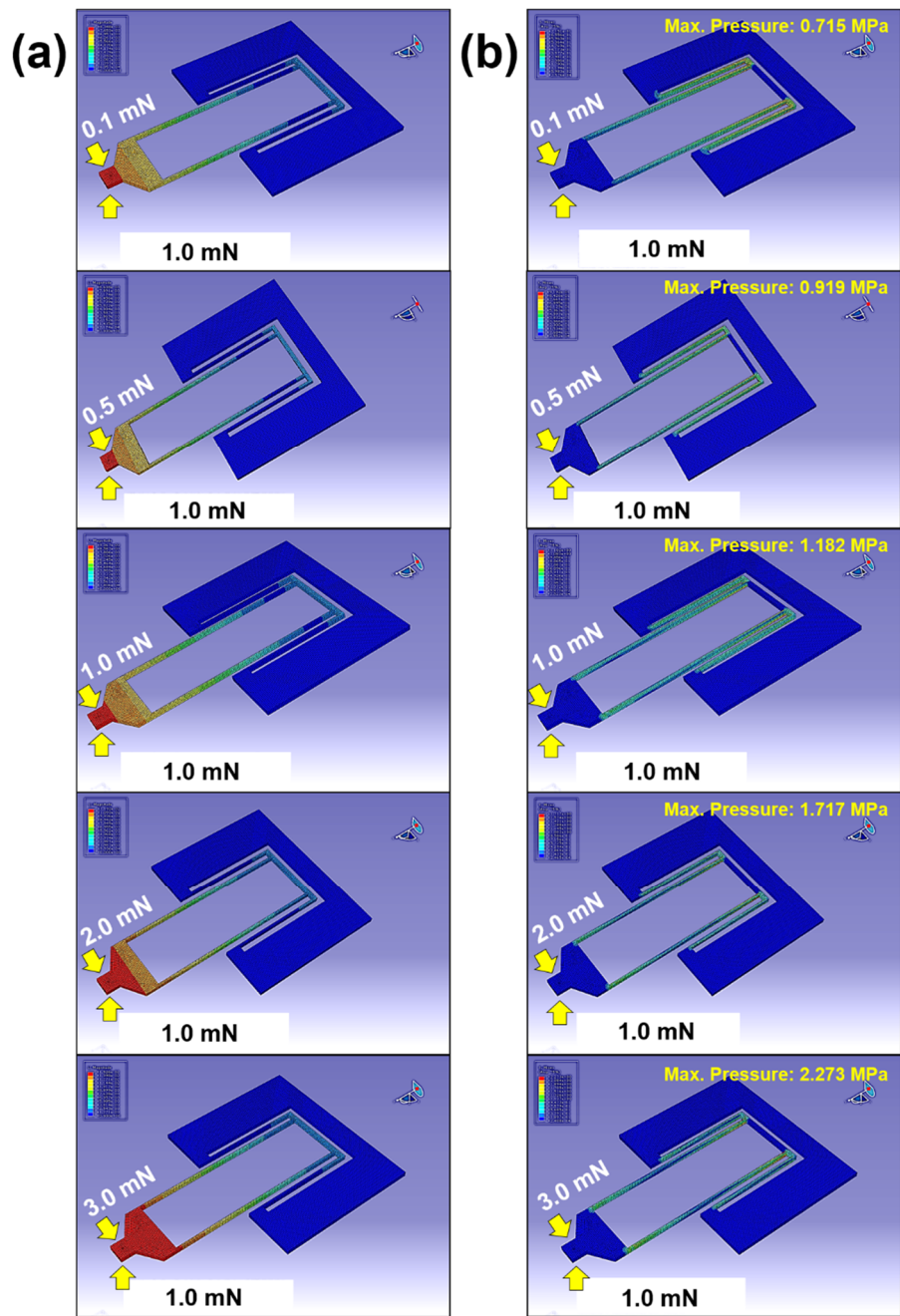


Figure S8. (a) Displacement and (b) pressure changes of Tip 3 depending on the friction force under a normal force of 1.0 mN.

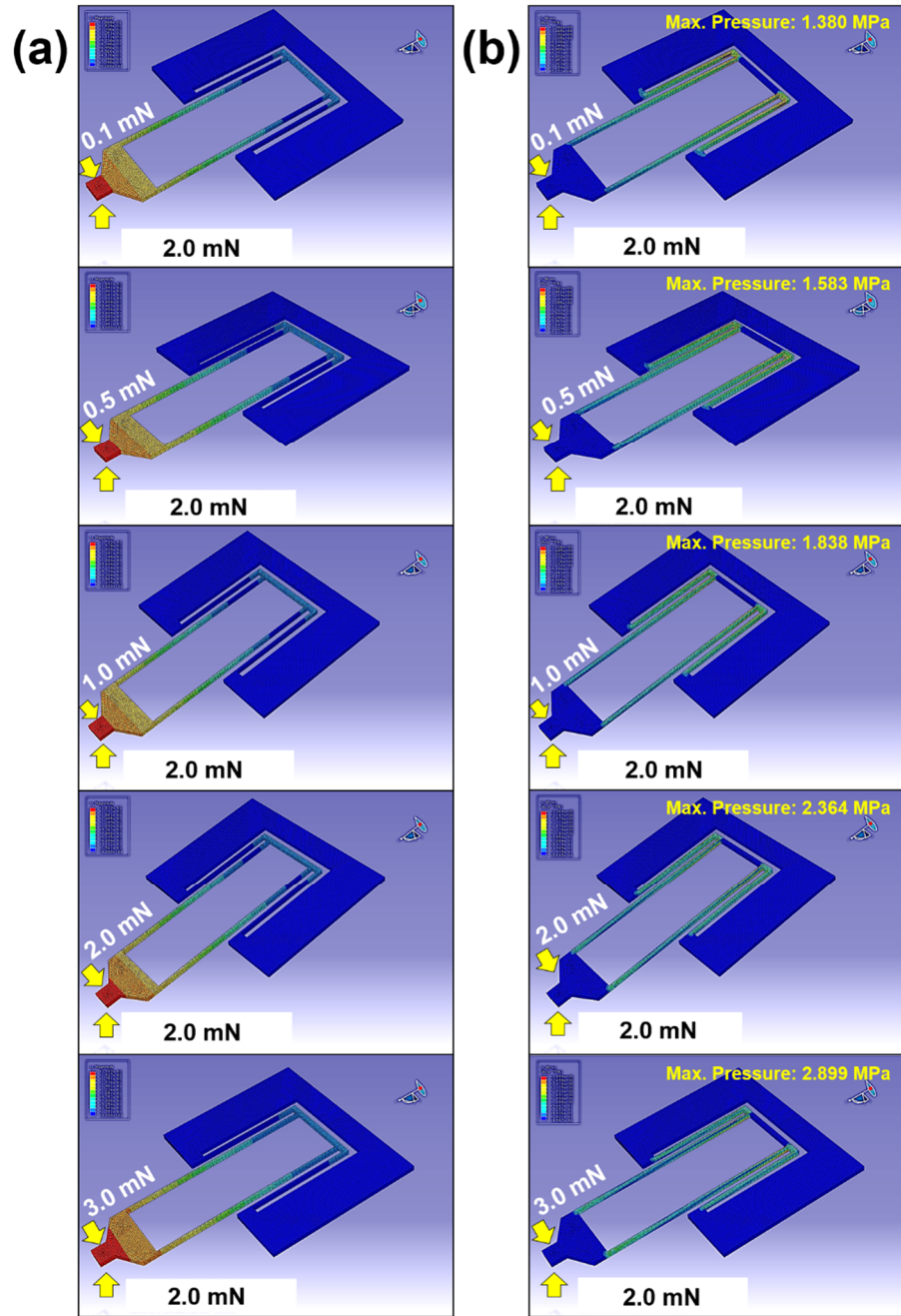


Figure S9. (a) Displacement and (b) pressure changes of Tip 3 depending on the friction force under a normal force of 2.0 mN.

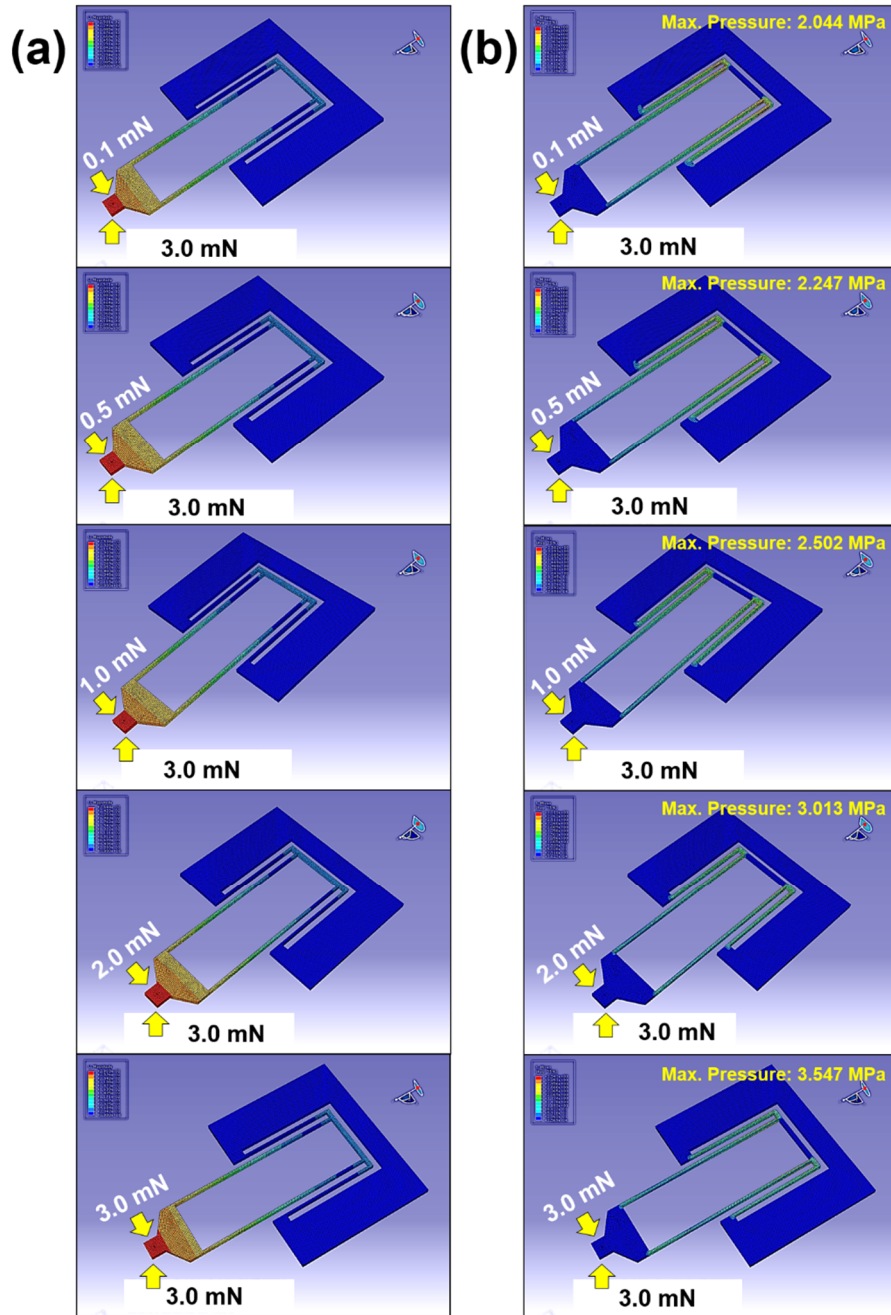


Figure S10. (a) Displacement and (b) pressure changes of Tip 3 depending on the friction force under a normal force of 3.0 mN.

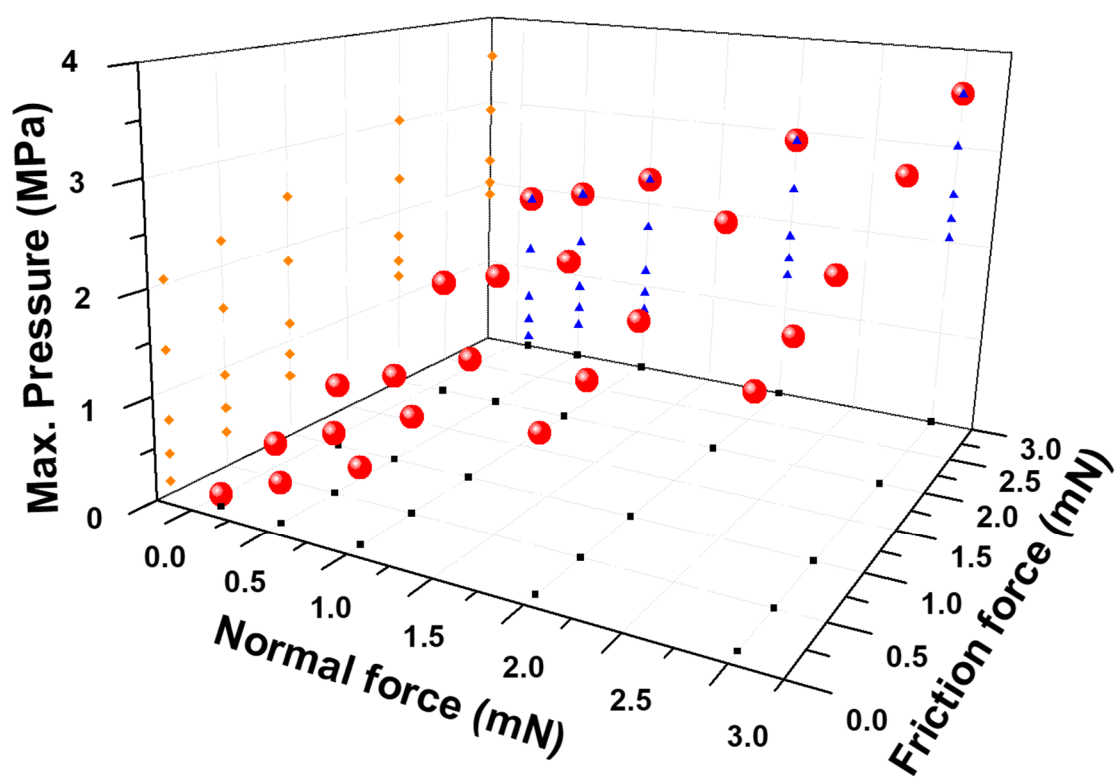


Figure S11. Relationship between the maximum pressure and normal/friction forces generated at the edge parts of the arms of the cantilever tip.