Electronic Supplementary Information

Functionalization of amine-cured epoxy resins by boronic acids based on dynamic dioxazaborocane formation

Yumiko Ito, Daisuke Aoki, and Hideyuki Otsuka*

Department of Chemical Science and Engineering, Tokyo Institute of Technology,

2-12-1 Ookayama, Meguro-ku, Tokyo 152-8550, Japan

*Corresponding author: Hideyuki Otsuka (Email: otsuka@polymer.titech.ac.jp)

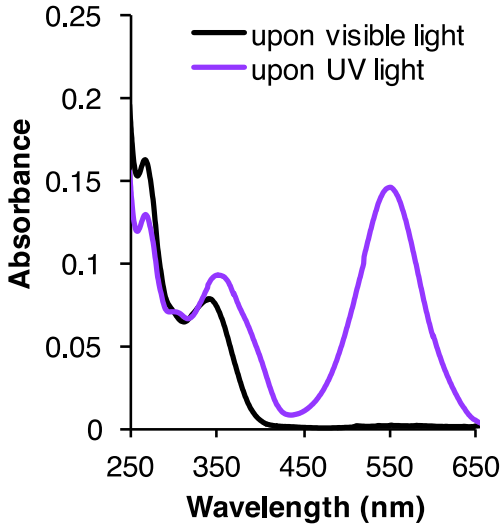

Fig. S1. UV-vis spectra of **SpBA** before (black) and after (purple) UV irradiation (254 nm, 2 min). Spectra were recorded on a 12.0 μM solution in acetonitrile.

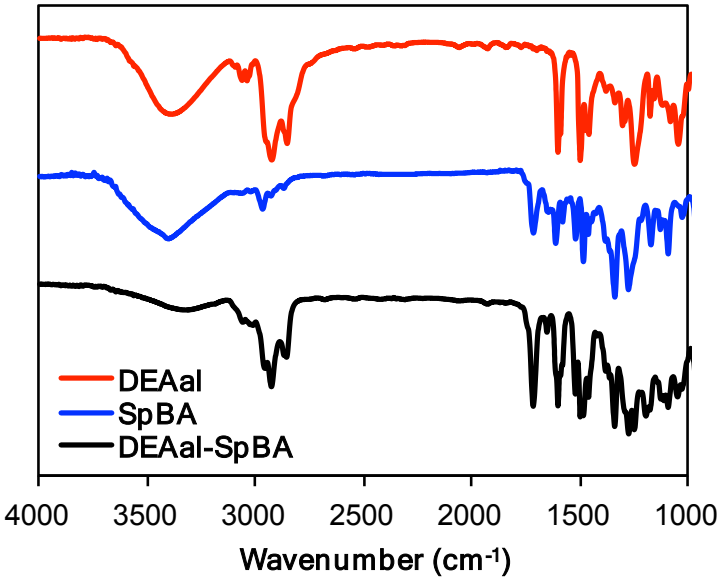

Fig. S2. FT-IR spectra of **DEAal** (red), **SpBA** (blue) and **DEAal-SpBA** (black) (NaCl).

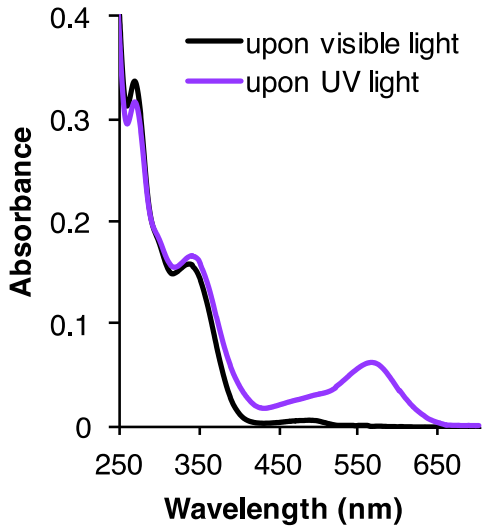

Fig. S3. UV-vis spectra of **PSpBA** before (black) and after (purple) UV irradiation (254 nm, 20 min). Spectra were recorded on an 8.00 mM solution in acetonitrile.

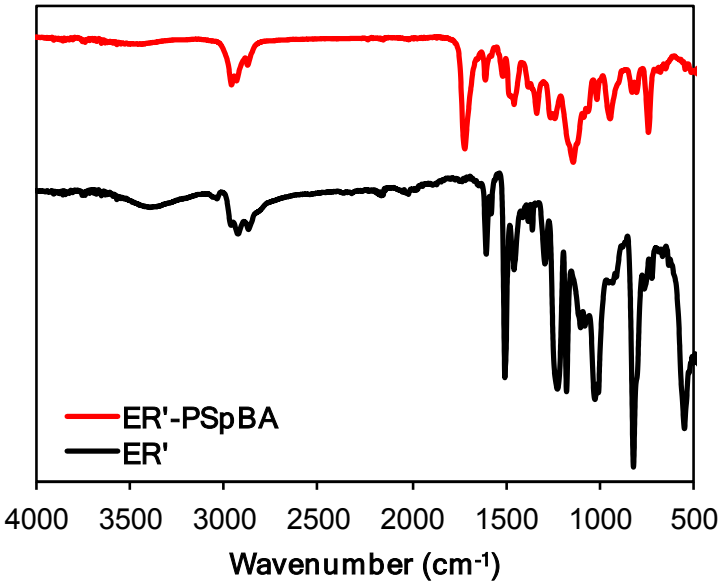

Fig. S4. ATR-FTIR spectra of **ER'** (black) and **ER'** coated with **PSpBA** (blue).

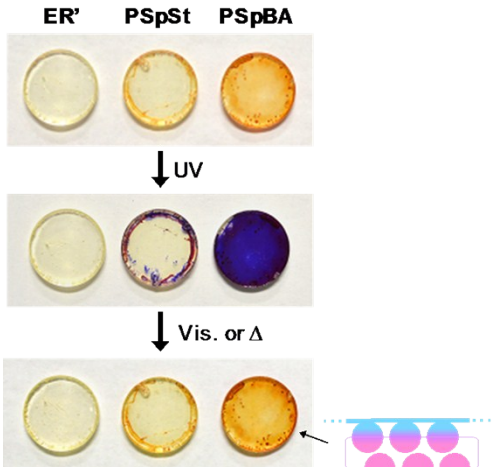

Fig. S5. Reversible color change of **PSpBA** coating

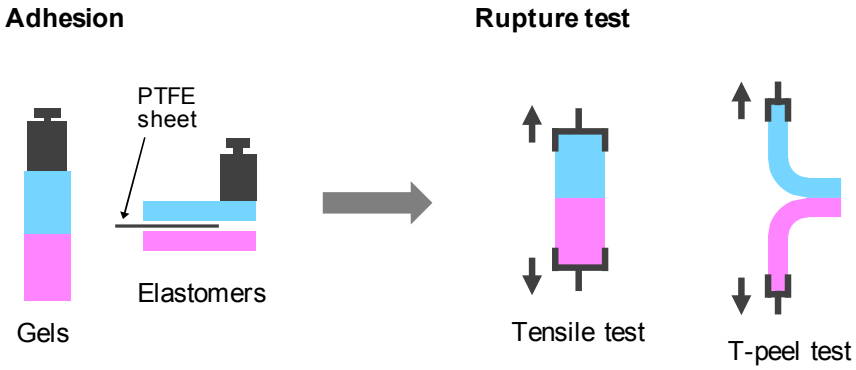

Fig. S6. Procedure for the evaluation of adhesion strength.

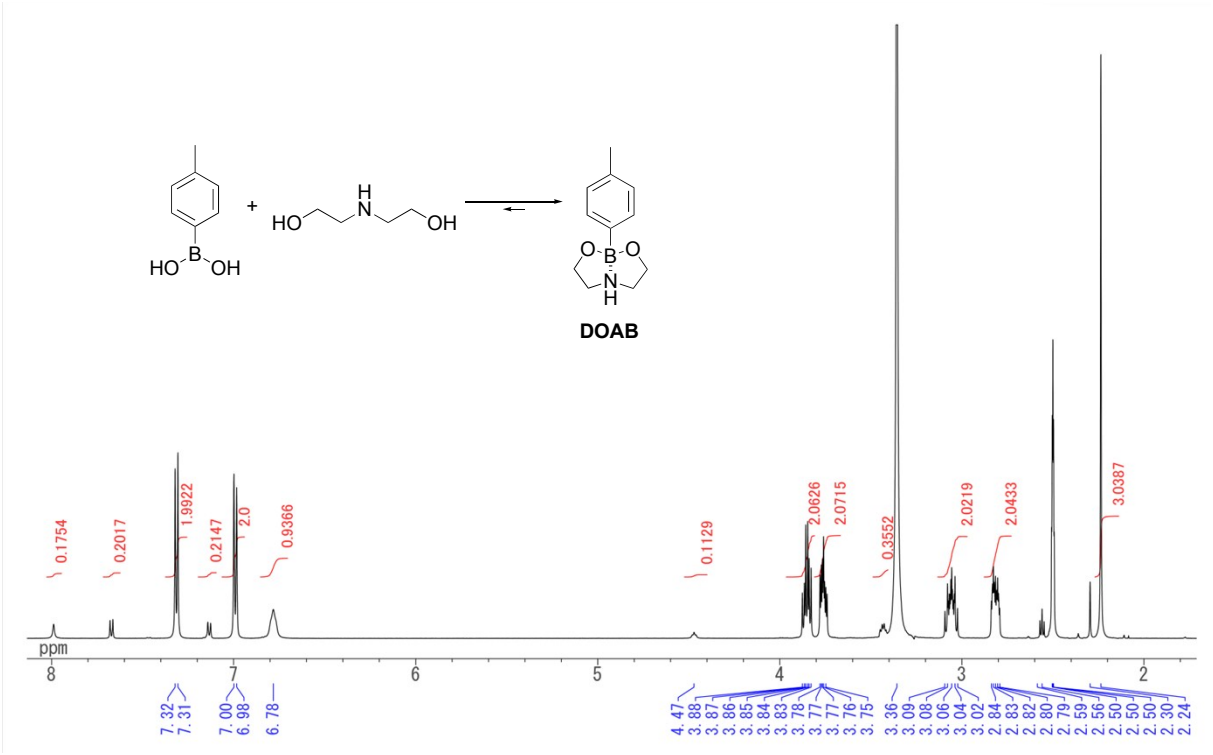

Fig. S7. ^{1}H NMR spectrum of the mixture of 4-methylphenylboronic acid and diethanolamine (DMSO-d_6, 500 MHz).

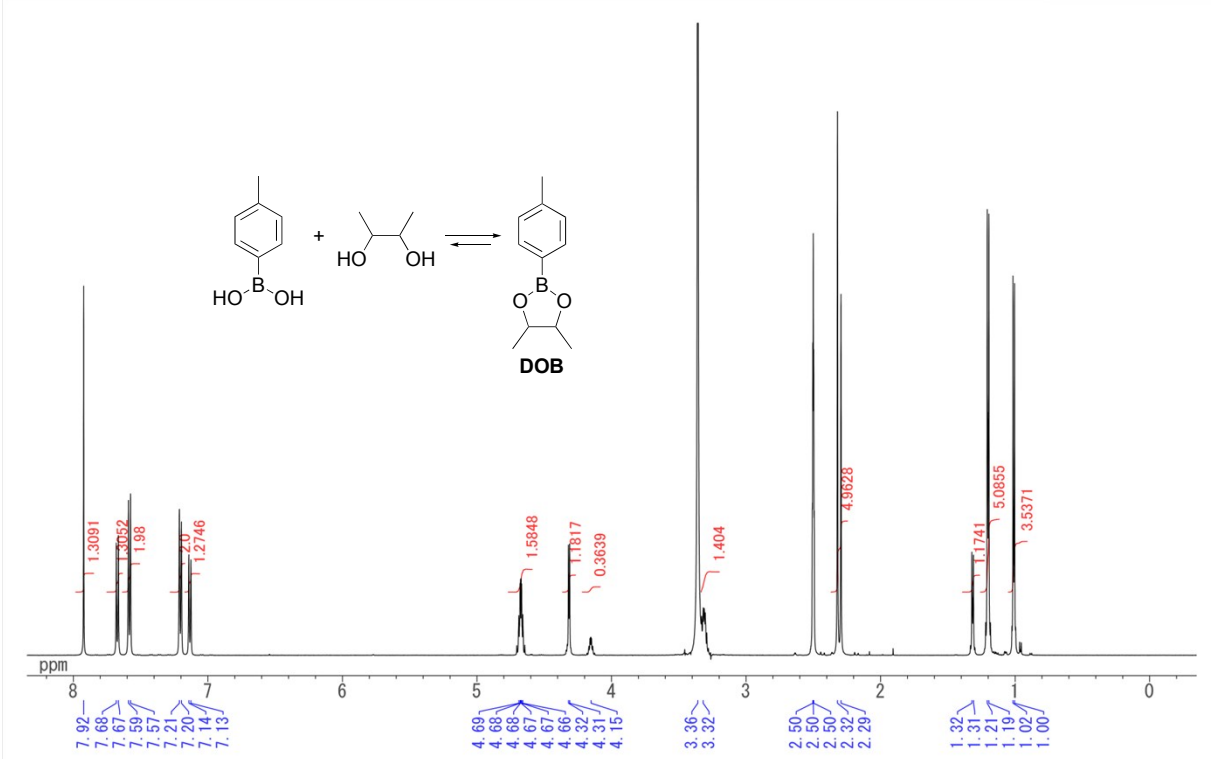

Fig. S8. ^{1}H NMR spectrum of the mixture of 4-methylphenylboronic acid and 2,3-butane diol (DMSO-d_6, 500 MHz).

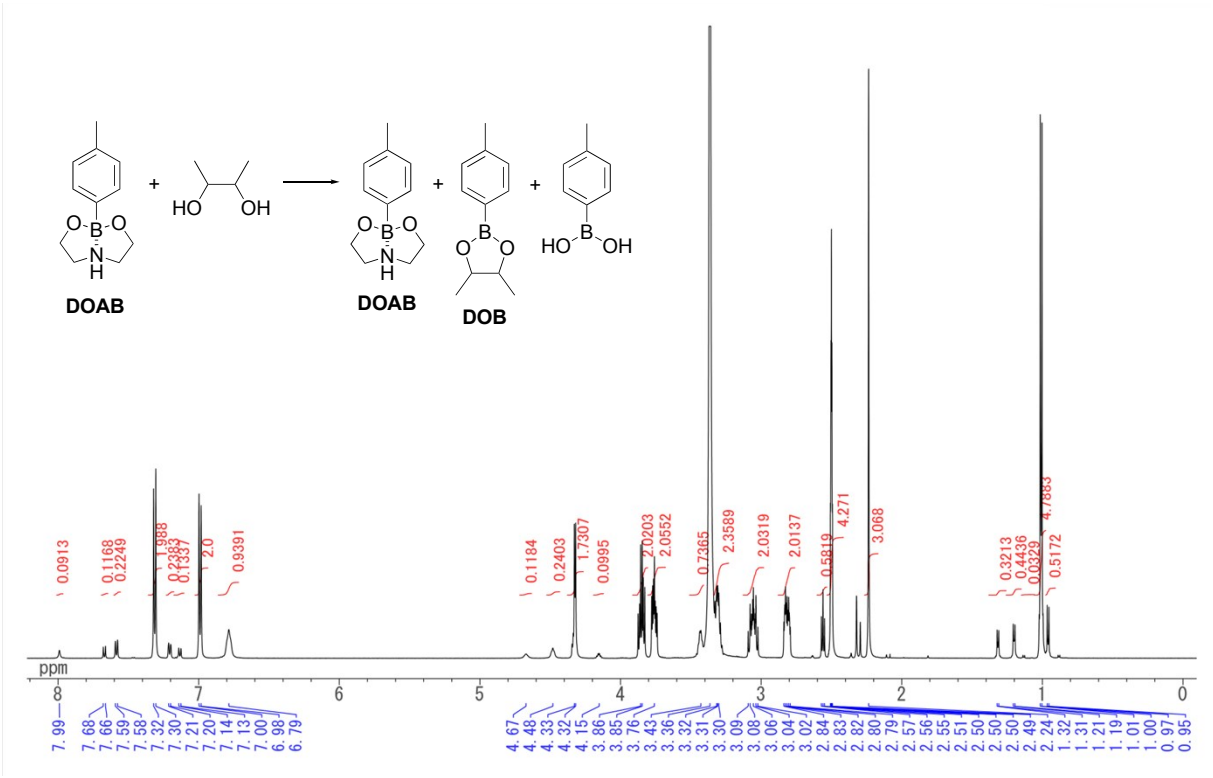

Fig. S9. ^{1}H NMR spectrum of the mixture of DOAB and 2,3-butanediol after their transesterification reached the equilibrium (DMSO-d_6, 500 MHz).

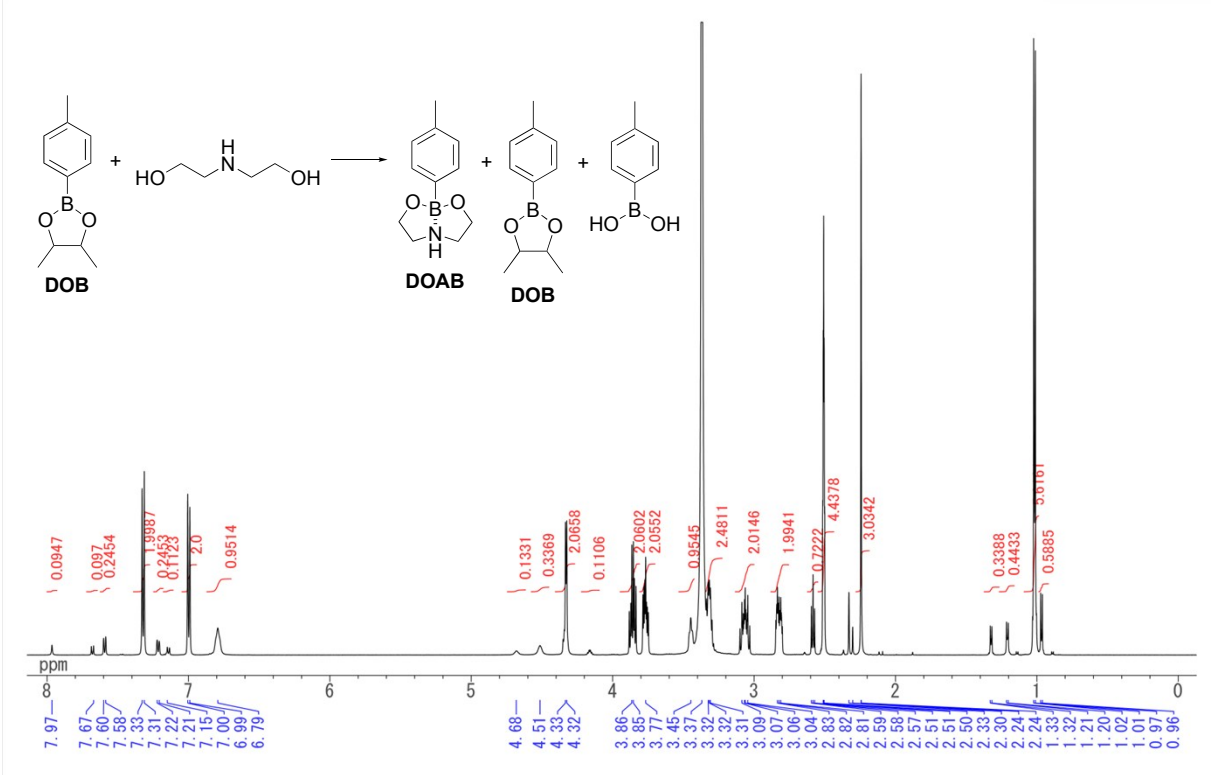

Fig. S10. ^{1}H NMR spectrum of the mixture of DOB and diethanolamine after their transesterification reached the equilibrium (DMSO-d_6, 500 MHz).