

## Supporting Information

### **A Self-Healing, Re-moldable and Biocompatible Crosslinked Polysiloxane Elastomer**

Jian Zhao <sup>a</sup>, Rui Xu <sup>b</sup>, Gaoxing Luo<sup>\*b</sup>, Jun Wu <sup>b</sup>, Hesheng Xia<sup>\*a</sup>

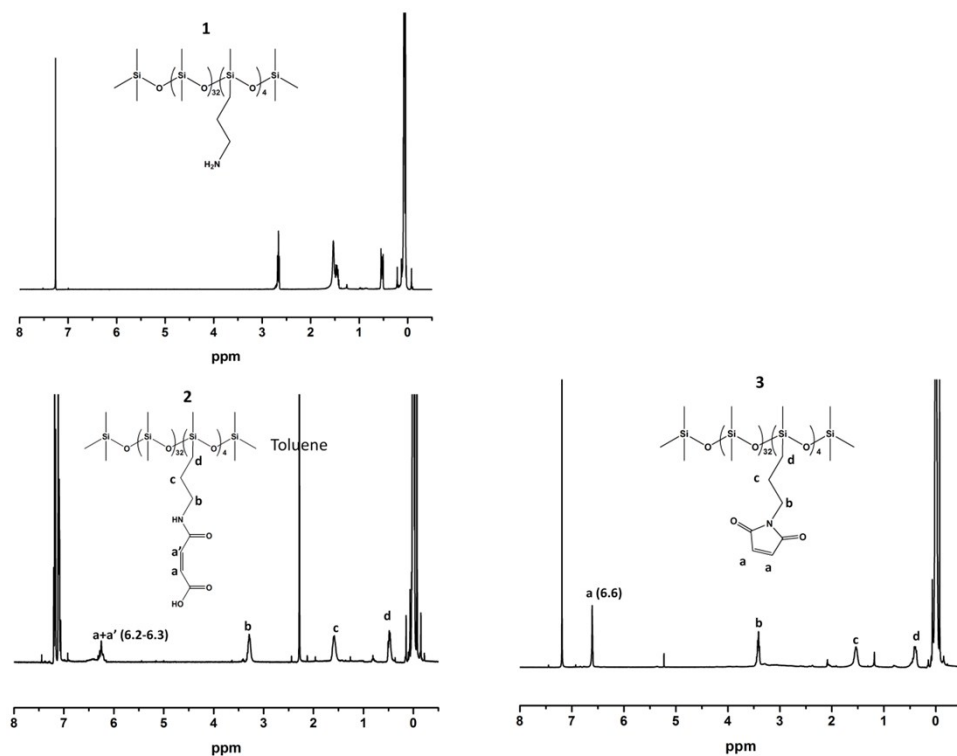
a: State Key Laboratory of Polymer Materials Engineering, Polymer Research Institute, Sichuan University, Chengdu 610065, China.

b: State Key Laboratory of Trauma, Burn and Combined Injury, Institute of Burn Research, Southwestern Hospital, Third Military Medical University, Chongqing 400038, China.

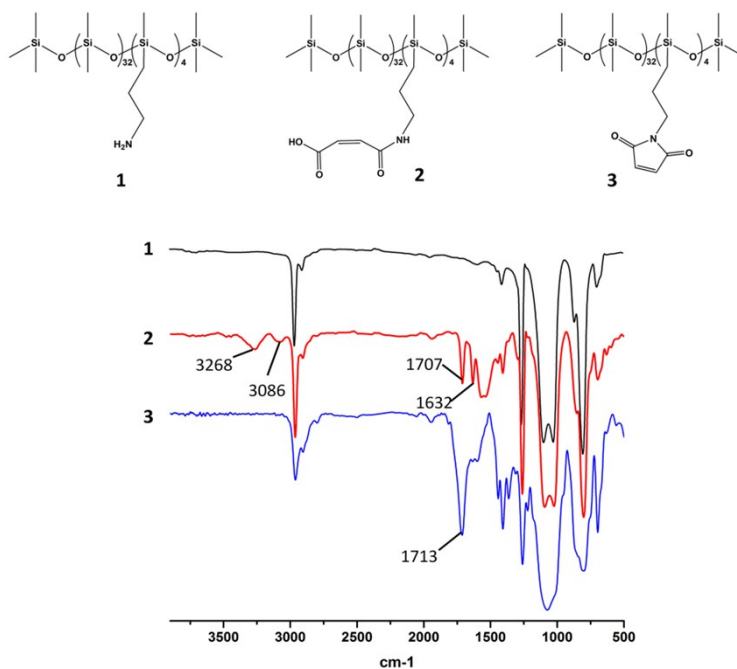
#### **Experimental section**

##### **Synthesis of the polydimethylsiloxane bearing maleamic acid pendants**

The polydimethylsiloxane bearing maleamic acid pendants was synthesized according to the reference<sup>1</sup>. 3 g (1 mmol) of the aminopropylmethylsiloxane-dimethylsiloxane copolymer (AMS-191) was added to 1.176 g (12 mmol) of acetic anhydride in 50 mL of toluene and the solution was heated at 80 °C overnight. After the solution was cooled to room temperature, toluene was removed on a rotary evaporation. The crude product was redissolved in 100 mL CH<sub>2</sub>Cl<sub>2</sub> and washed with deionized water (50 mL, three times). The organic layer was dried over anhydrous magnesium sulfate, filtered, and the solvent was removed to give the desired product as viscous oil.



**Figure S1.**  $^1\text{H}$  NMR spectra of siloxane copolymers with amino functionalities (1), maleamic acid functionalities (2), and maleimide functionalities (3).



**Figure S2.** FTIR spectra of siloxane copolymers with amino functionalities (1), maleamic acid functionalities (2), and maleimide functionalities (3).

Reference:

1. R. Gheneim, C. P. Berumen, A. Gandini, *Macromolecules*, 2002, 35, 7246.