

Facile Preparation of Polyimine Vitrimers with Enhanced Creep Resistance, Thermal and Mechanical Properties via Metal Coordination

Sheng Wang,^{a,b} Songqi Ma,^{a*} Qiong Li,^{a,b} Xiwei Xu,^a Binbo Wang,^a Kaifeng Huang,^a Yanlin
liu,^a Jin Zhu^a

^a Key laboratory of bio-based polymeric materials technology and application of Zhejiang
province, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of
Sciences, Ningbo 315201, P. R. China

^b University of Chinese Academy of Sciences, Beijing 100049, P. R. China

*Corresponding authors: (Songqi Ma) E-mail masongqi@nimte.ac.cn, Tel 86-574-87619806

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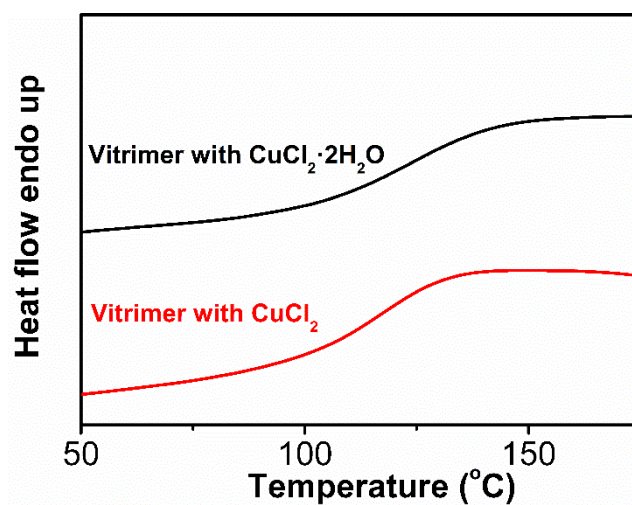


Figure S1. Non isothermal DSC curves of the polyimine-metal complex vitrimers with CuCl₂·2H₂O or CuCl₂ as the metal salts.

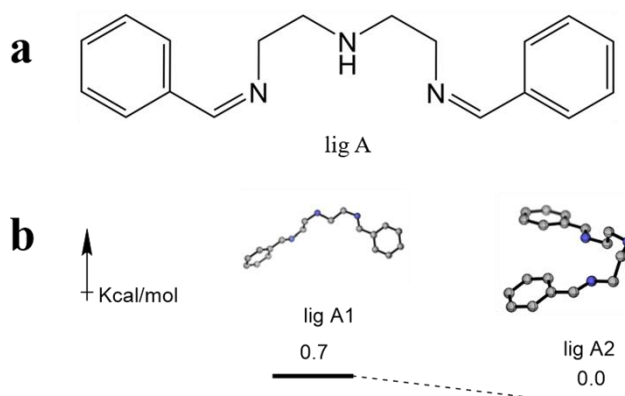


Figure S2. (a) Structure of model compound lig A; (b) The two possible structural conformers of lig A. The relative energies (in kcal mol⁻¹) are shown in parenthesis.

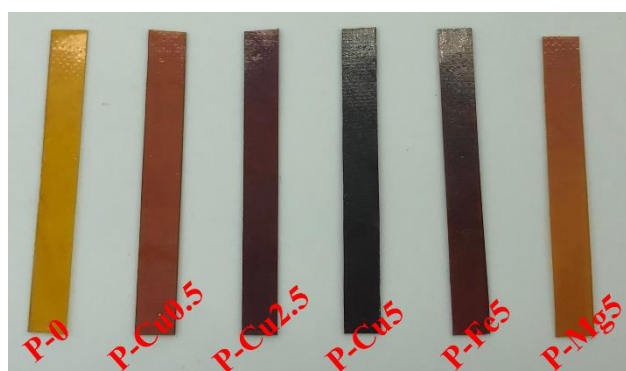


Figure S3. Digital photos of the polyimine-metal complex vitrimers.

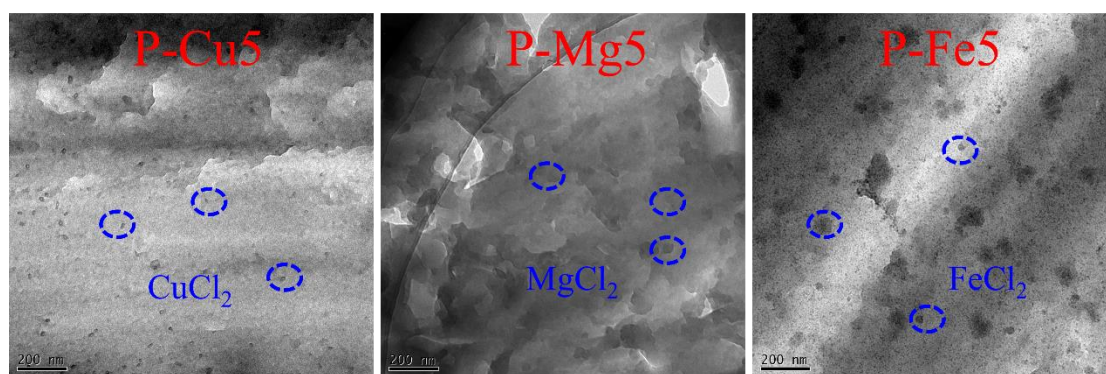


Figure S4. TEM images of P-Cu5, P-Mg5 and P-Fe5.

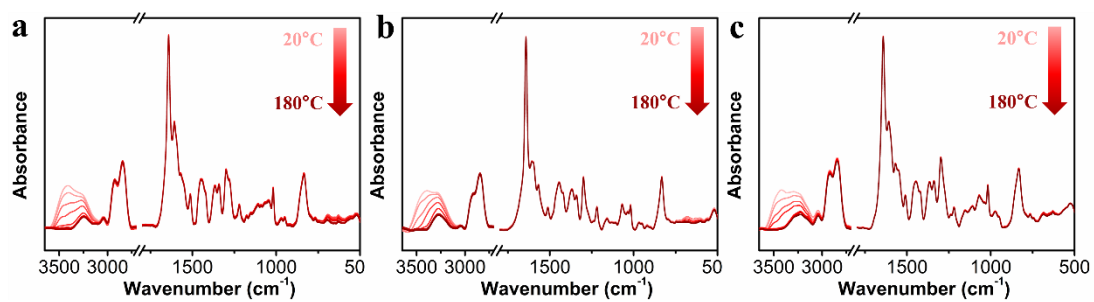


Figure S5. Temperature-dependent FTIR spectra of (d) P-Cu5, (e) P-Mg5 and (f) P-Fe5.

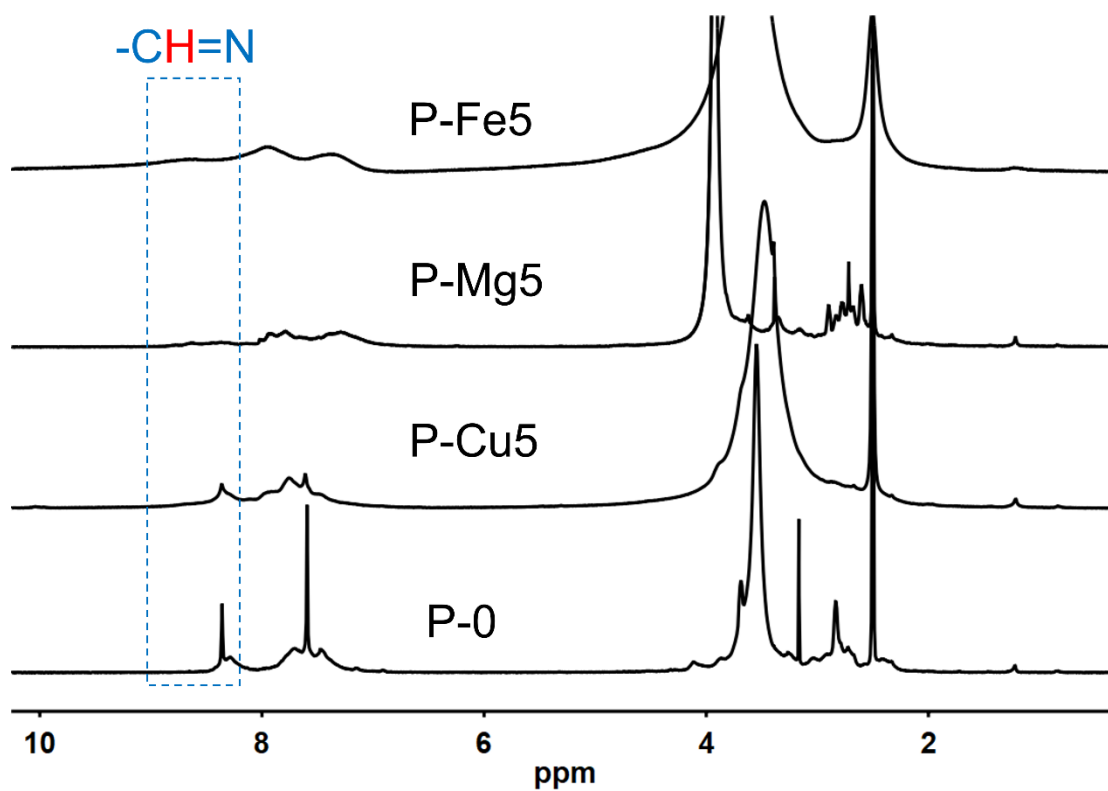


Figure S6. ^1H NMR spectra of the extracts from the vitrimers during swelling test in DMSO at 140 °C.

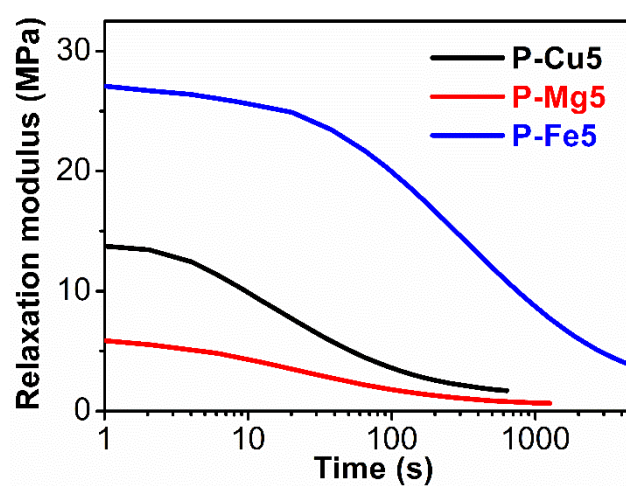


Figure S7. Stress relaxation curves of P-Cu5, P-Fe5 and P-Mg5 at 190 °C.

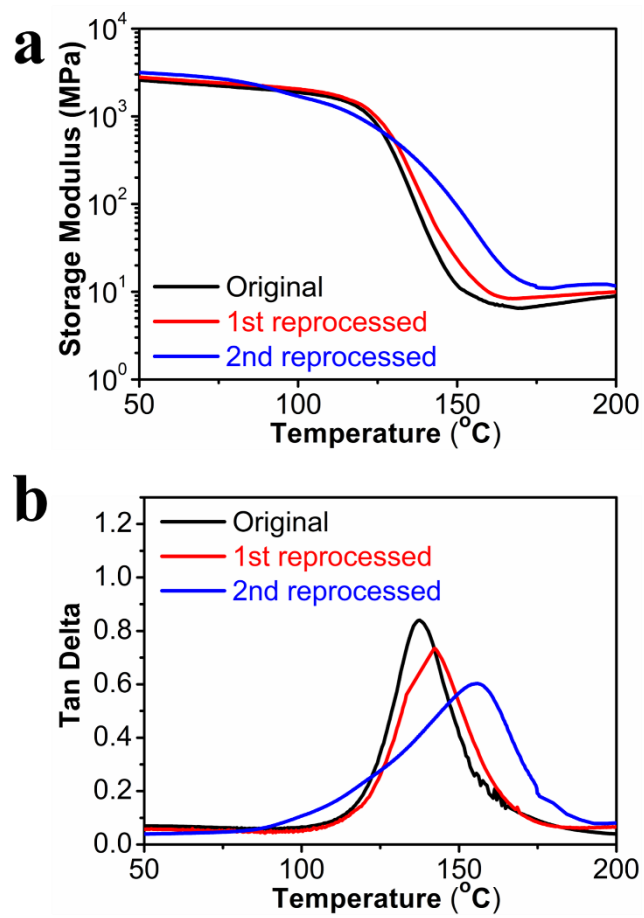


Figure S8. DMA curves of P-Cu5 before and after two cycles reprocessing.

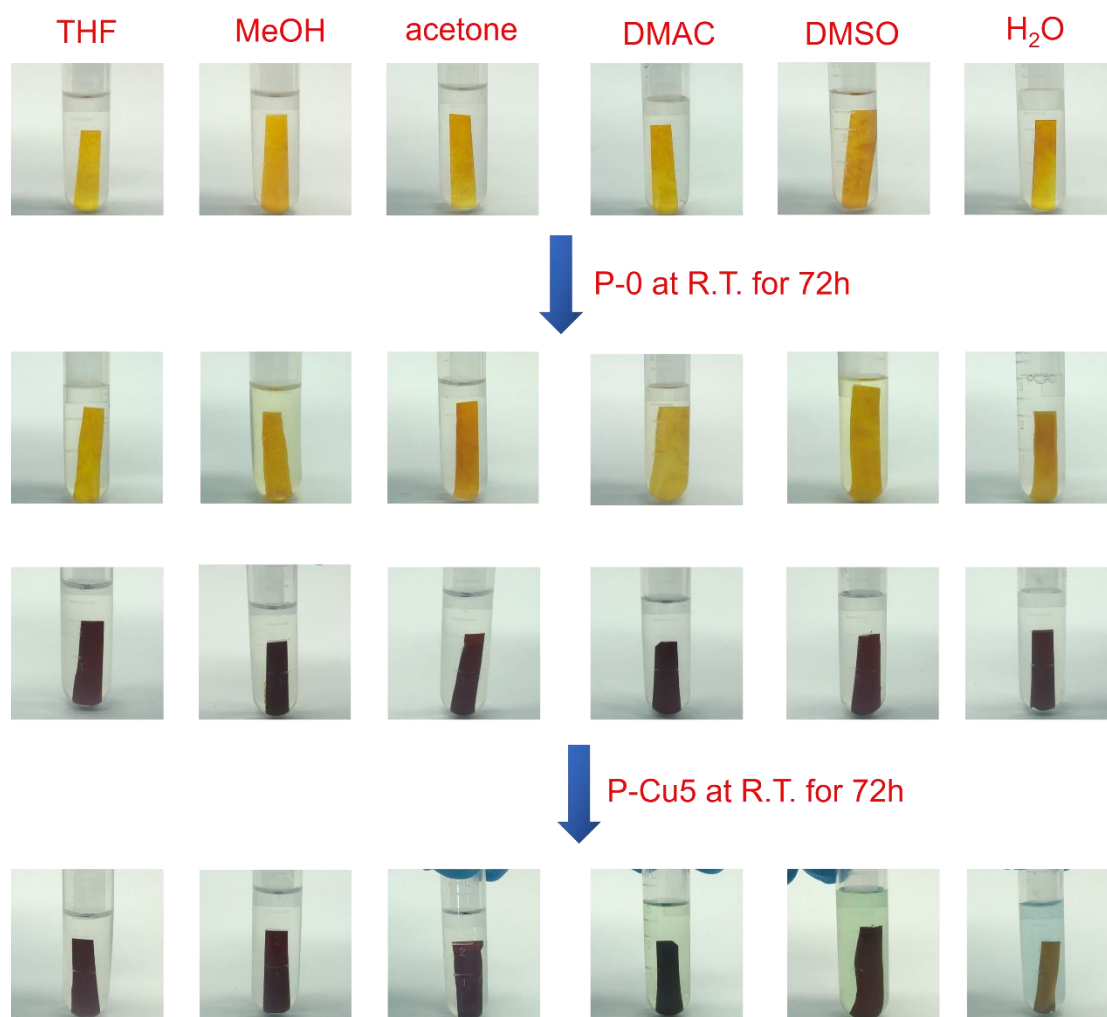


Figure S9. Stability of P-0 and P-Cu5 in different solvents at room temperature (R.T.) for 72 h.

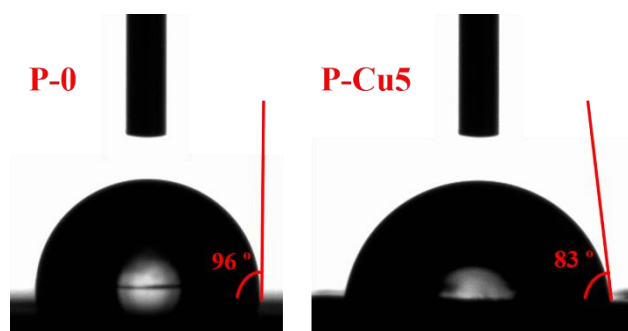


Figure S10. Contact angle of P-0 and P-Cu5 in water.

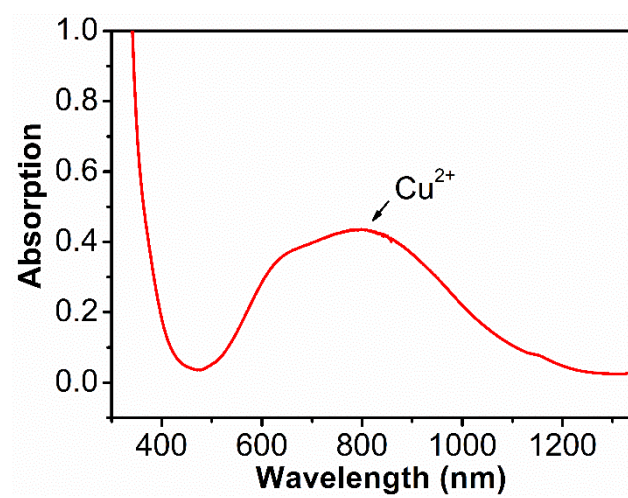


Figure S11. UV-Vis absorption spectrum of P-Cu5 extracts in water.

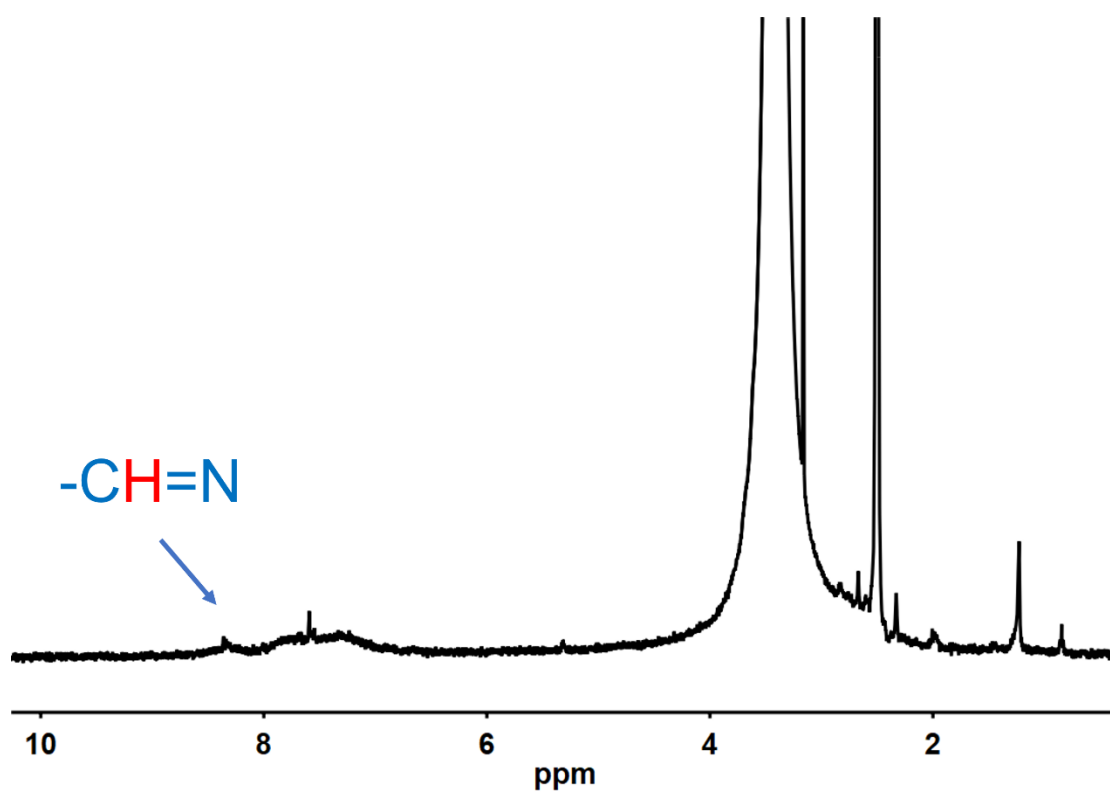


Figure S12. ^1H NMR spectrum of P-Cu5 extracts during stability test in DMSO.

Table S1. TGA Data of the polyimine vitrimers.

Sample	$T_{d5\%}(\text{°C})$	$T_{d30\%}(\text{°C})$	$R_{700}(\%)$
P-0	278	422	39.4
P-Cu0.5	278	416	39.8
P-Cu2.5	281	400	42.4
P-Cu5	282	412	44.2
P-Mg5	281	395	40.2
P-Fe5	289	401	45.4