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Article

Effects of Underwater Friction Stir Welding Heat Generation on Residual Stress of AA6068-T6 Aluminum Alloy

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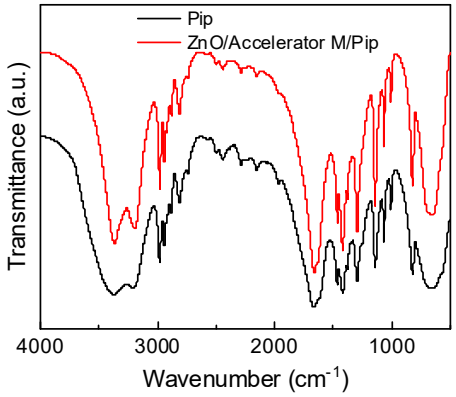

Figure S1. The complet FTIR spectra of phase transfer agent and ZnO/accelerator/phase transfer agent.

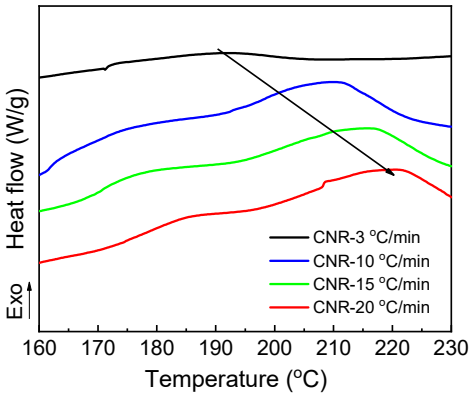

Figure S2. Heating flow curves of CNR at different heating rates.

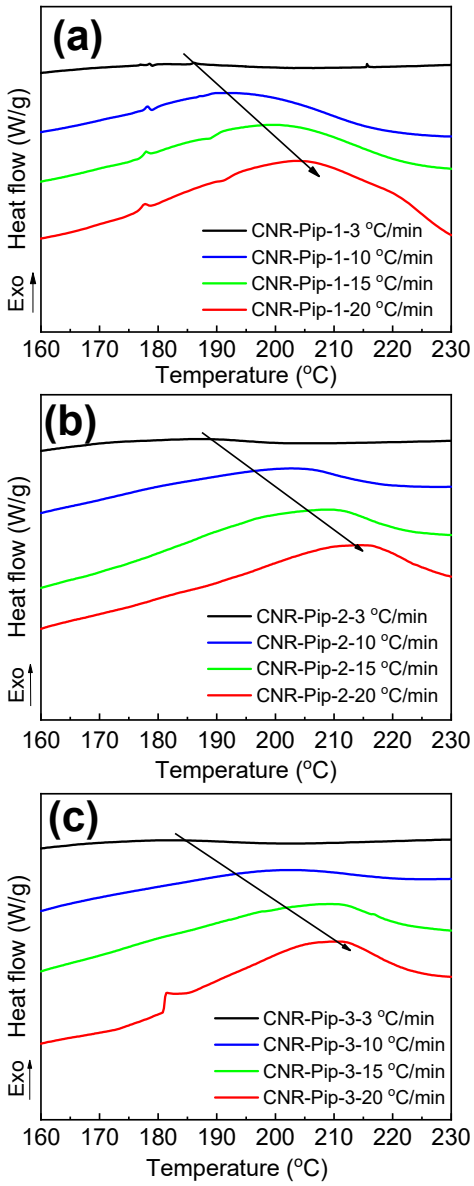

Figure S3. Heating flow curves of CNR-Pip samples at different heating rates. (a) CNR-Pip-1. (b) CNR-Pip-2. (c) CNR-Pip-3.

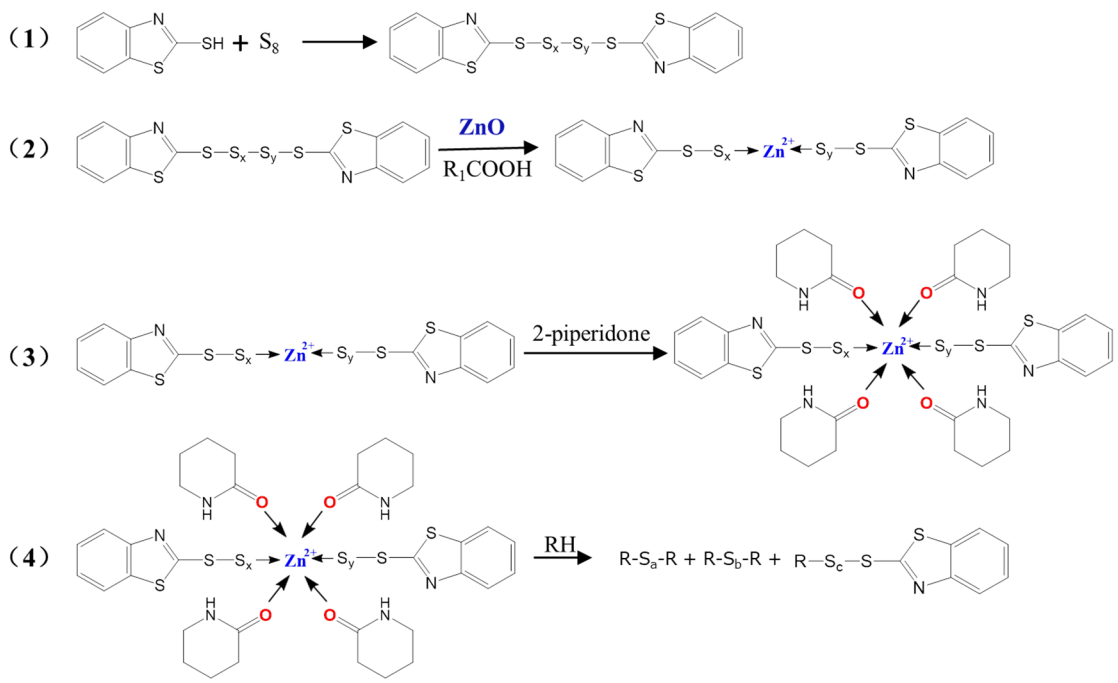

Figure S4. The schematic diagram of 2-piperidone participating in the vulcanization crosslinking process of natural rubber.

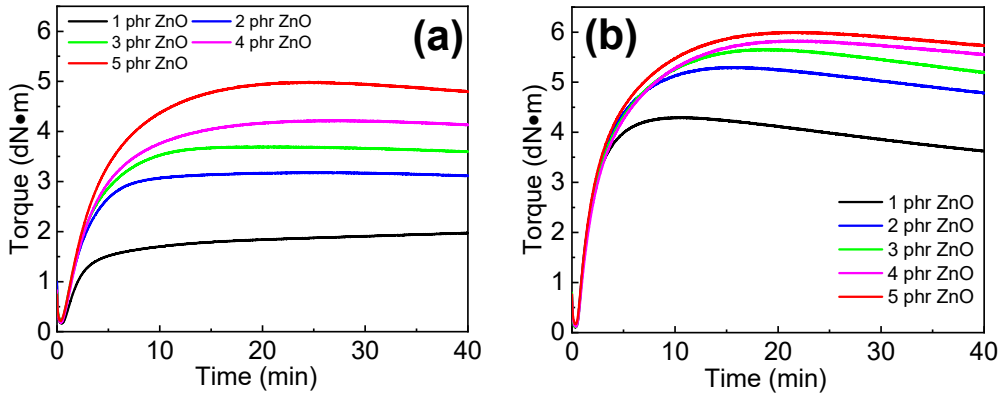

Figure S5. (a) Effect of ZnO content on vulcanization curves for the samples without phase transfer agent (Pip). (b) Effect of ZnO content on vulcanization curves for the samples with phase transfer agent (Pip).

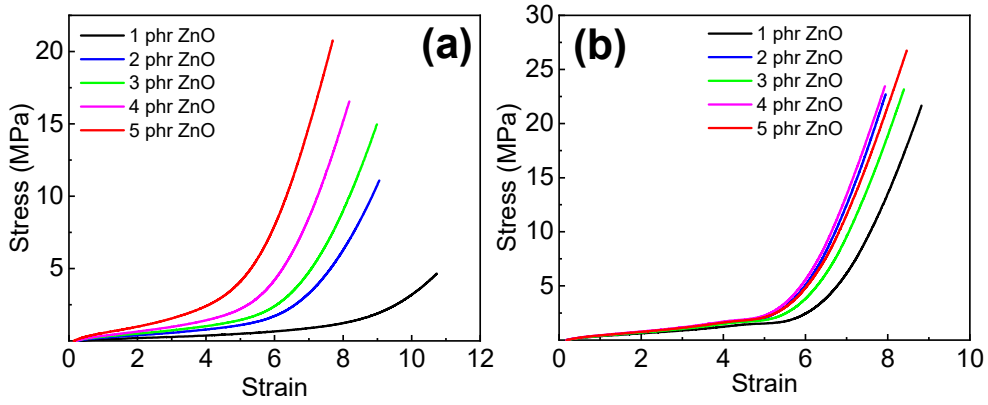

Figure S6. (a) Effect of ZnO content on stress-strain curves for samples without phase transfer agent (Pip). (b) Effect of ZnO content on stress-strain curves for samples with phase transfer agent (Pip).

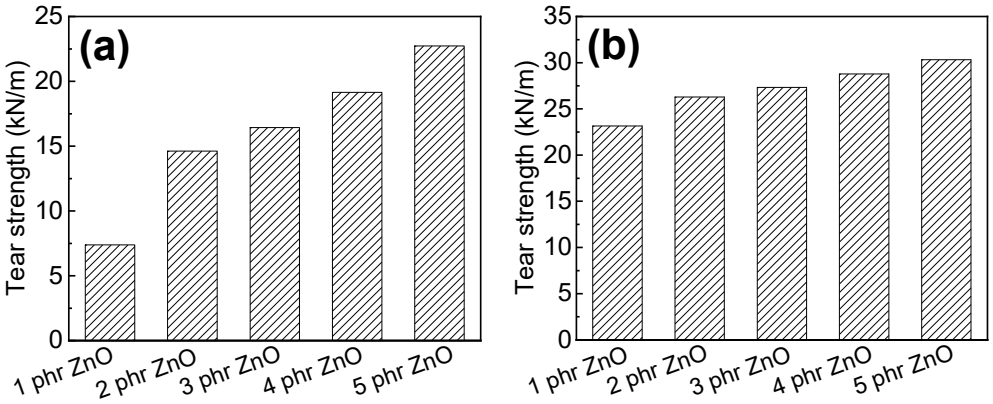

Figure S7. (a) Effect of ZnO content on tear strength for samples without phase transfer agent (Pip). (b) Effect of ZnO content on tear strength for samples with phase transfer agent (Pip).