Bistable Actuation Based on Antagonistic Buckling SMA Beams

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Supplementary Information

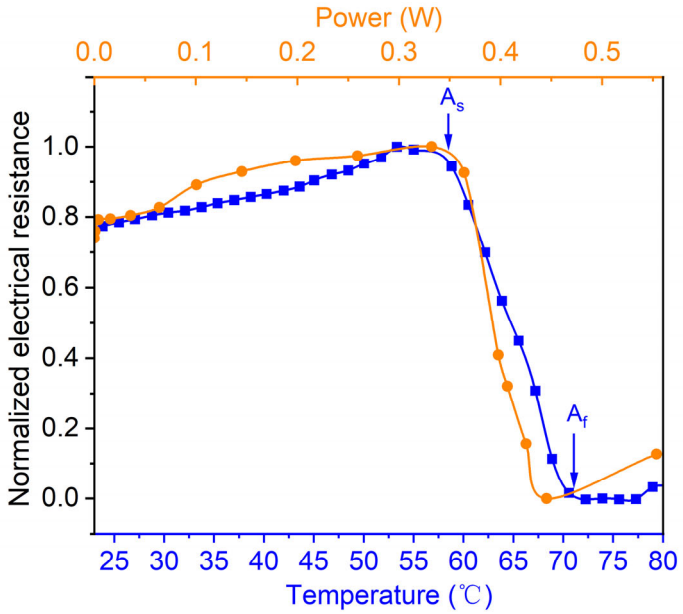

Figure S1: Normalized electrical resistance of the monostable SMA actuator determined under Joule heating conditions (yellow). For comparison, the normalized electrical resistance of the SMA film material is determined under ambient heating conditions (blue) in a thermostat. Normalization is performed using the expression $(R - R_{min})/(R_{max} - R_{min})$. Comparing both measurements indicates that an electrical power of >430 mW is required to increase the average temperature above A_f temperature.

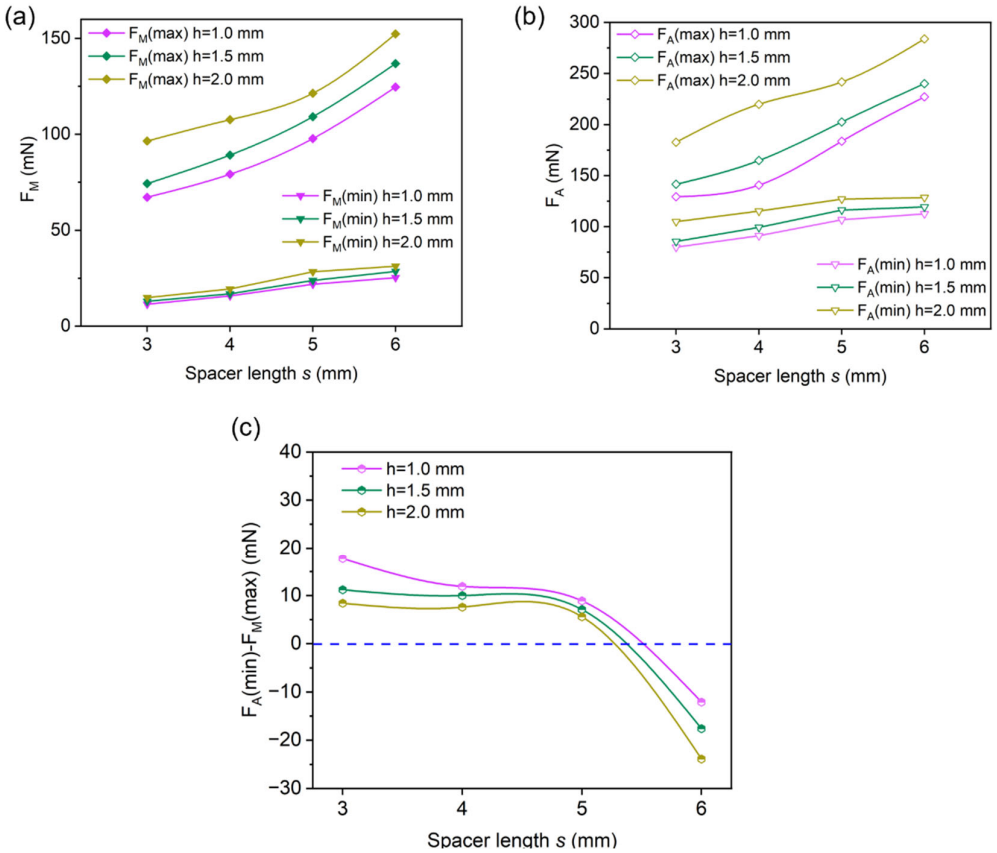

Figure S2: The combined effects of spacer length *s* and pre-deflection *h* on the minimum and maximum forces of monostable SMA actuators in martensite (F_M(min), F_M(max)) (a) and austenite condition (F_A(min), F_A(max)) (b) as well as on the corresponding force difference F_A(min)- F_M(max). Both parameters *s* and *h* affect the forces in a similar way and, thus, both effects add up.