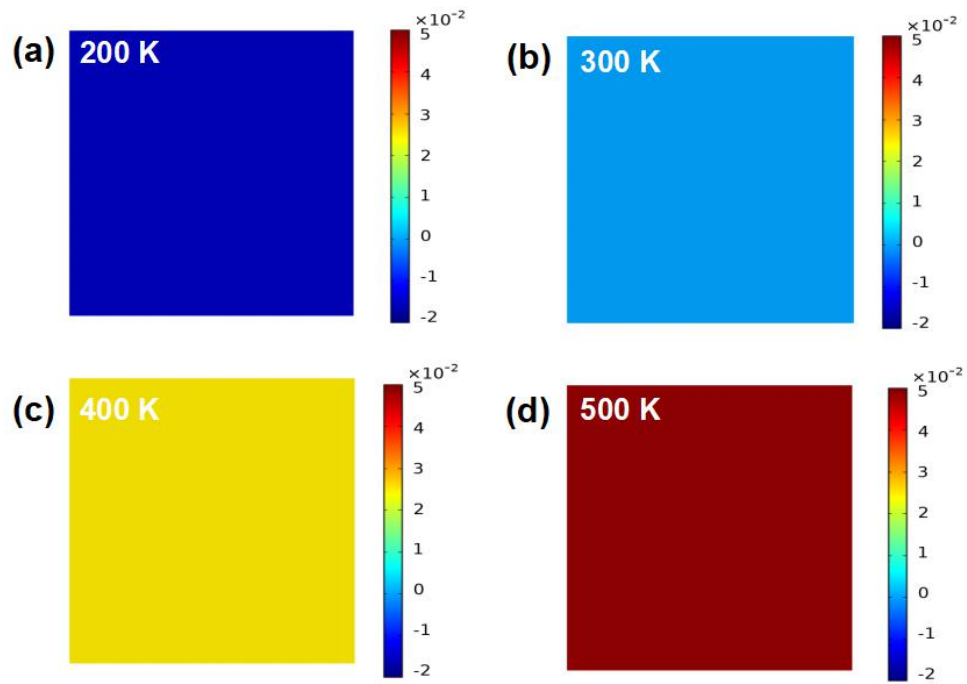


1  
 2 **Supplementary Figure 3.** Flowchart for the numerical inversion procedure to obtain the  $\alpha_{MoS_2}$  that  
 3 satisfies the experimental results.



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4

5 **Supplementary Figure 4.** Adopting the TEC of monolayer MoS<sub>2</sub> obtained in this work, numerical  
6 simulation results of the strain distribution in bare MoS<sub>2</sub> at 200 K, 300K, 400 K and 500K, respectively.

7