

Supporting Information

Effect of Li Concentration-dependent Material Properties on Diffusion Induced Stresses of Sn Anode

Chung Su Hong^{a†}, **Nadeem Qaiser**^{b†}, **Hyeon Gyun Nam**^{a†}, **Seung Min Han**^{a,b,*}

^a Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST), Daejeon 305-701, Korea

^b Graduate School of Energy Environment Water Sustainability (EEWS), Korea Advanced Institute of Science and Technology (KAIST), Daejeon 305-701, Korea

† Chung Su Hong and Nadeem Qaiser and Hyeon Gyun Nam contributed equally

Corresponding author:

*smhan01@kaist.ac.kr, Tel.: +82-42-350-1716, Fax: +82-42-350-1710

1- Radial stresses of Sn micropillar with plasticity and creep effect

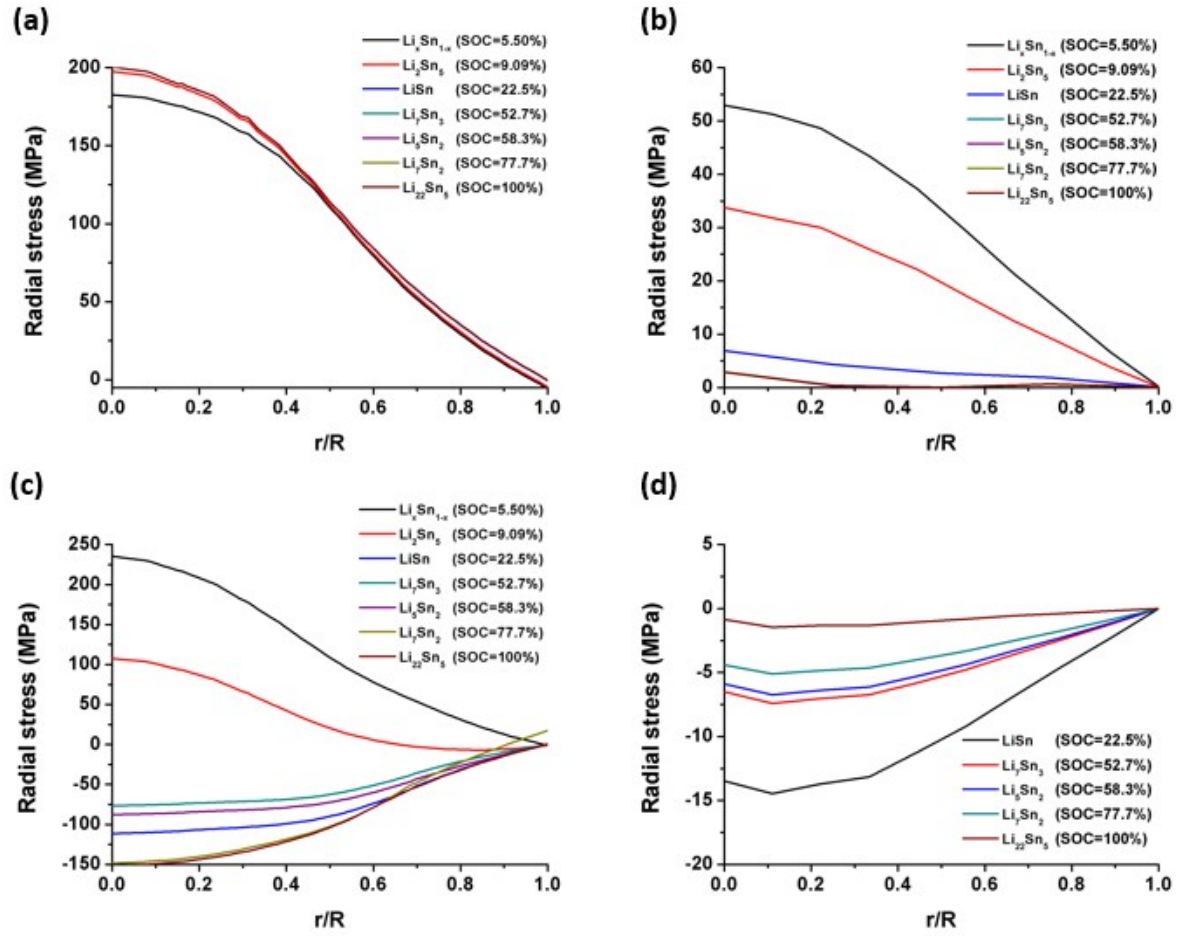


Figure S1. Radial stresses of Sn micropillar with constant material properties in (a) elastoplastic deformation and (b) elastoplastic and creep deformation. And radial stresses of Sn micropillar with concentration-dependent material properties in (c) elastoplastic deformation and (b) elastoplastic and creep deformation.

2- Effect of concentration-dependent material properties to stress distribution

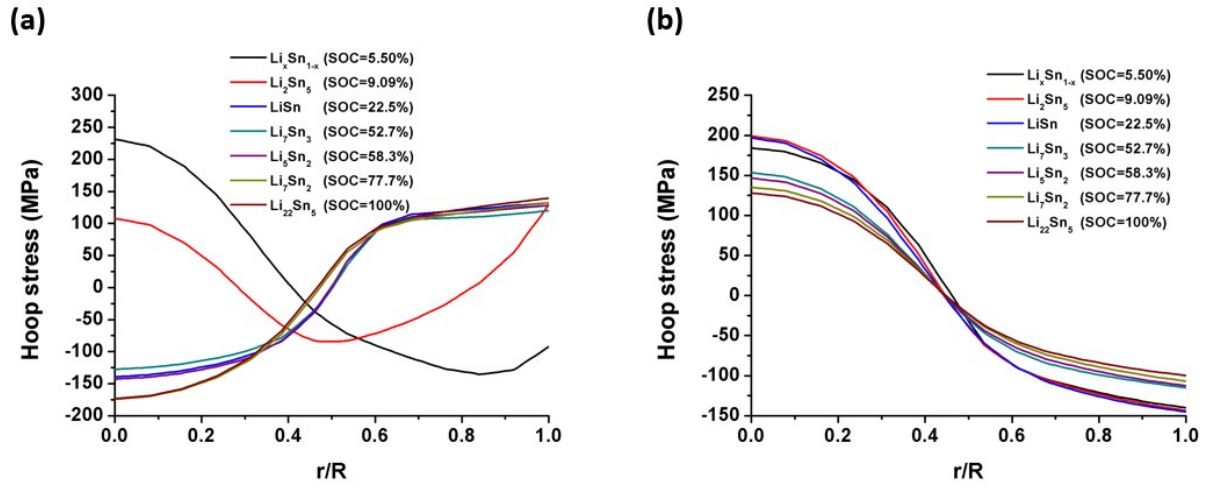


Figure S2. Hoop stresses of Sn micropillar with (a) D_c , E , ν and (b) D , E_c , ν_c