

Supplementary Material

Figure S1. P - h curves obtained from spherical indentation creep tests at different P_{\max} . The inset images are; (left) the normalized curves recorded during quasi-static indentations and (right) the indentation creep curve for $P_{\max}=5$ mN in which Hertzian elastic curve is also drawn.

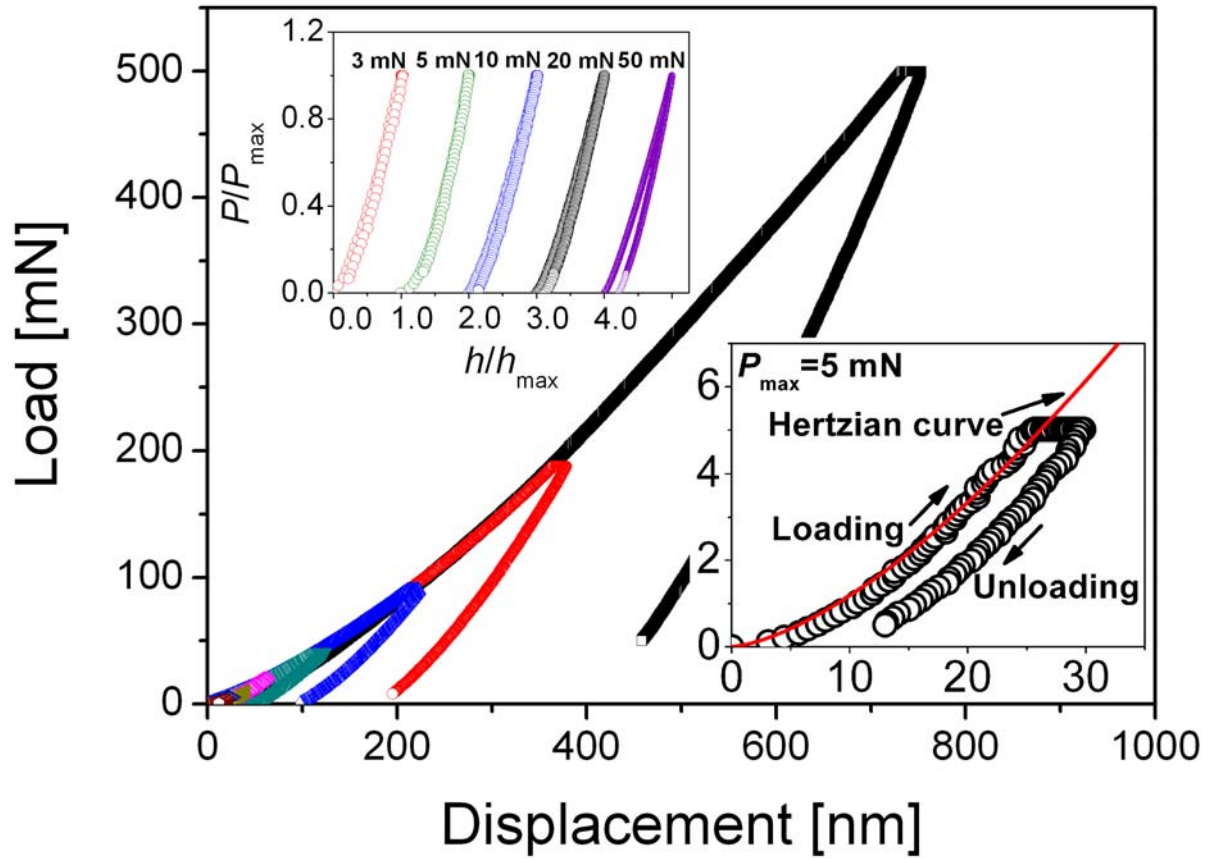


Table S1. Comparison of stress exponent (n) and strain rate sensitivity (m) in nc Ni measured from various creep tests.

Grain sizes, nm; [Ref.]	n	m	Temp./ Test	Strain rate (/s)	Proposed mechanisms
6 [6]	1.18	0.85	RT/ Uniaxial tension	$\sim 10^{-6}$ - 10^{-7}	Grain boundary sliding
20 [6]	2	0.5	RT/ Uniaxial tension	$\sim 5 \times 10^{-9}$ - $\times 10^{-8}$	Grain boundary sliding
25 [11]	20- 140	0.01- 0.05	RT/ Berkovich indentation	$\sim 10^{-2}$ - 10^{-4}	Grain boundary sliding or dislocation climb
30 [21]	1.1	0.91	RT/ Uniaxial tension	$\sim 10^{-9}$	Coble creep
30 [21]	6.5	0.15	373K/ Uniaxial tension	$\sim 10^{-7}$ - 10^{-8}	Dislocation climb
30 [here]	1.02- 1.85	0.54- 0.98	RT/ Spherical indentation	$\sim 10^{-8}$	Grain boundary-related
30 [here]	19- 43	0.02- 0.05	RT/ Berkovich indentation	$\sim 10^{-6}$ - 10^{-5}	Dislocation climb
40 [6]	2	0.5	RT/ Uniaxial tension	$\sim 5 \times 10^{-10}$	Dislocation creep
44-77 [3]	3.11- 14.81	0.068- 0.32	348~448K/ Berkovich indentation	$\sim 10^{-3}$	Dislocation creep
60 [4]	5.13	0.19	398 K/ Uniaxial compression	$\sim 10^{-4}$ - 10^{-5}	Dislocation climb
60 [4]	5.78	0.17	398 K/ Berkovich indentation	$\sim 10^{-2}$ - 10^{-3}	Dislocation climb