Electronic Supplementary Information

Assessing thermal spike model of swift heavy ion-matter interaction via $Pd_{1-x}Ni_x$/Si interface mixing

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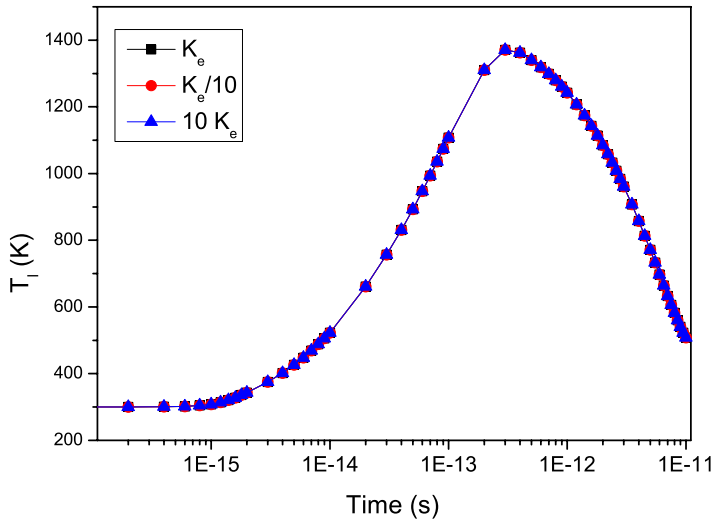
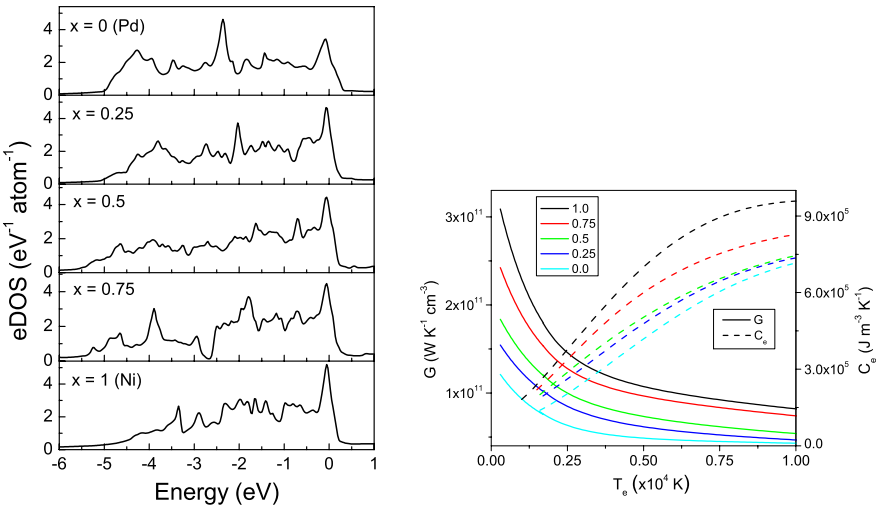
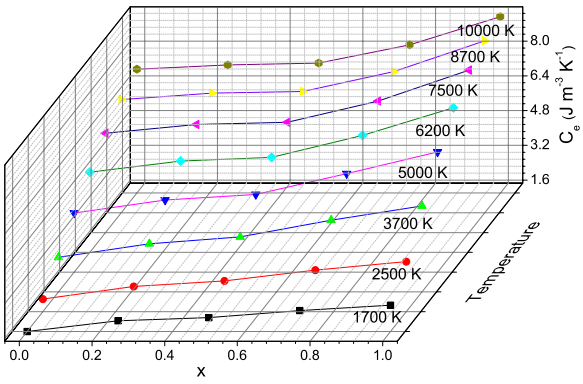


Fig. S1: The evolution of lattice temperature with time for 100 MeV Au ions in Ni right at the ion track. The three coincident curves are plotted for the following three sets of lattice temperature dependent lattice thermal conductivities: $K_l(T_l)$ for Ni[1] (black), $K_l(T_l)$ reduced by a factor of 10 (red), and multiplied by a factor of 10 (blue) from the Ni value at all lattice temperatures.

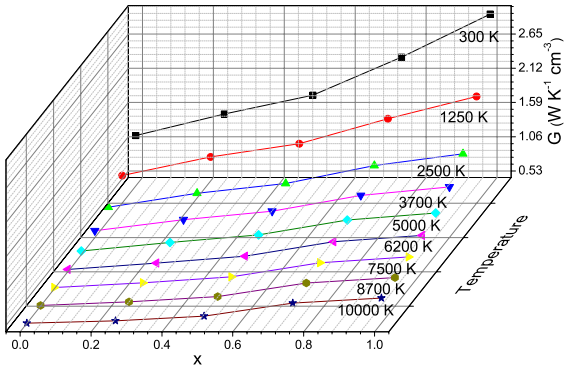


(a) (b)

Fig. S2: (a) The electron densities of states of the $Pd_{1-x}Ni_x$ (x = 0, 0.25, 0.5, 0.75, 1) alloy system. (b) Variations of G and C_e with T_e for this alloy system.



(a)



(b)

Fig. S3: Variation of G (a) and C_e (b) with *x* at different sampled electronic temperatures.

References

[1]Z. G. Wang, C. Dufour, E. Paumier and M. Toulemonde, J. Phys.: Condensed Matter, 1994, 6, 6733.