Supporting Material:

Mass spectrometry and beam deflection studies of tin-lead nanoalloy clusters

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Figures

Fig. S 1: Comparison of the obtained beam profiles for rod 1 (a) and rod 2 (b) for a mass of about 1807 amu at 28 kV. The experimental data points without (with) deflection field are given by blue circles (red squares). The lines drawn through the data points are Gaussians. The two possible clusters are Pb₇Sn₃ (1806.1 amu) and Sn₁₀Pb₃ (1808.7 amu). Due to the remarkable differences of the molecular beam profiles the mass peak assignment was done as indicated above.

Fig. S 2: Molecular beam profiles of Sn₈Pb₃ and Sn₃Pb₈ at 28 kV deflection voltage highlighting the different dielectric response of tin and lead rich clusters. The experimental data points without (with) deflection field are given by blue circles (red squares). The lines drawn through the data points are Gaussians.
Fig. S 3: Deflection and squared broadening versus the squared deflection voltage in order to determine the polarizibility and the dipole moment by eq. 2 and eq. 3 for Pb$_x$Sn at 50 K. The dotted lines indicate the experimental uncertainty.
Fig. S 4: Deflection and squared broadening versus the squared deflection voltage in order to determine the polarizibility and the dipole moment by eq. 2 and eq. 3 for Pb\textsubscript{N}Sn\textsubscript{2} at 50 K. The dotted lines indicate the experimental uncertainty.
Fig. S 5: Deflection and squared broadening versus the squared deflection voltage in order to determine the polarizibility and the dipole moment by eq. 2 and eq. 3 for Pb$_x$Sn$_3$ at 50 K. The dotted lines indicate the experimental uncertainty.
Fig. S 6: Deflection and squared broadening versus the squared deflection voltage in order to determine the polarizibility and the dipole moment by eq. 2 and eq. 3 for PbSn$_M$ at 50 K. The dotted lines indicate the experimental uncertainty.
Fig. S 7: Deflection and squared broadening versus the squared deflection voltage in order to determine the polarizibility and the dipole moment by eq. 2 and eq. 3 for Pb$_2$Sn$_M$ at 50 K. The dotted lines indicate the experimental uncertainty.
Fig. S 8: Deflection and squared broadening versus the squared deflection voltage in order to determine the polarizibility and the dipole moment by eq. 2 and eq. 3 for Pb₃Sn₉ at 50 K. The dotted lines indicate the experimental uncertainty.