

Electronic Supplementary Information for

**Bridging the Gas and Condensed Phases for Metal Atom
Encapsulating Silicon- and Germanium-Cage Superatoms: Electrical
Properties of Assembled Superatoms**

Takaho Yokoyama^a and Atsushi Nakajima^{*,a}

*^aDepartment of Chemistry, Faculty of Science and Technology, Keio University, 3-14-1 Hiyoshi,
Kohoku-ku, Yokohama 223-8522, Japan*

*Address correspondence to A. Nakajima

Tel: +81-45-566-1712, Fax: +81-45-566-1697, E-mail: nakajima@chem.keio.ac.jp

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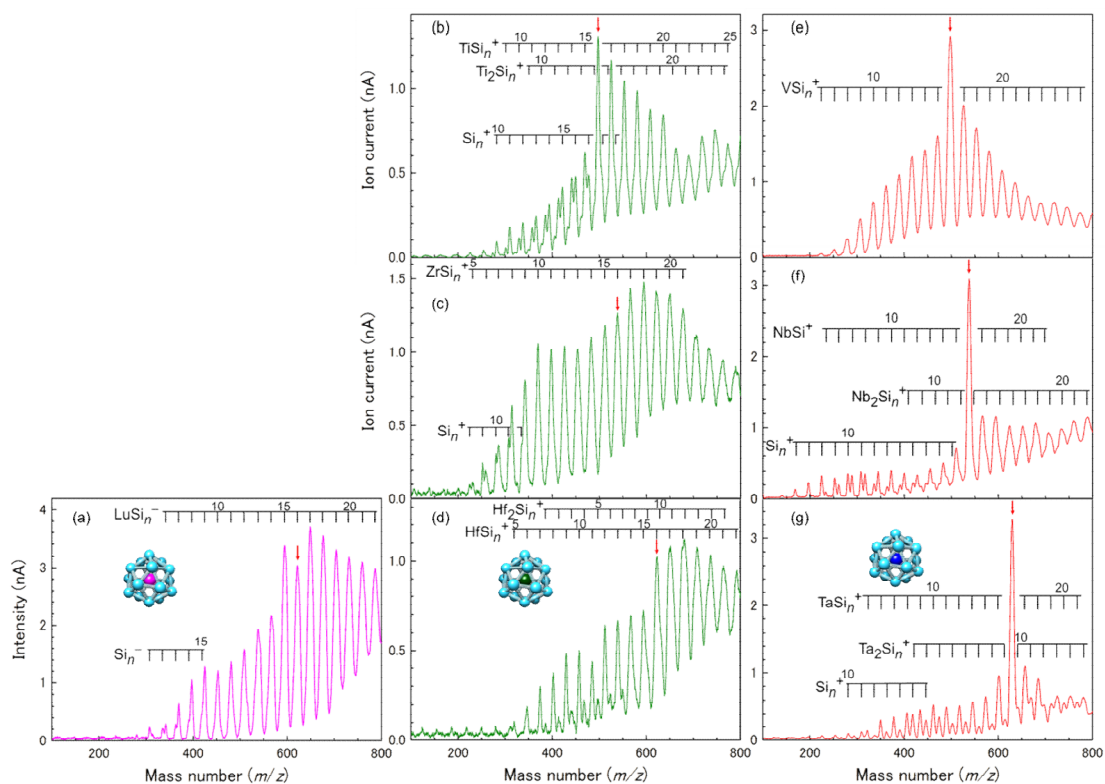


Figure S1. Mass spectra of M-Si binary NC anions of (a) M = Lu and cations of M = (b) Ti, (c) Zr, (d) Hf, (e) V, (f) Nb, and (g) Ta. Red arrows indicate the peak corresponding to M@Si₁₆^{+/-}.

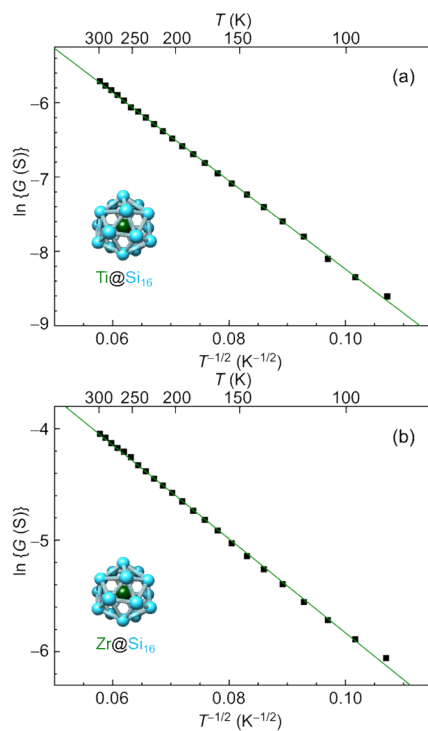


Figure S2. Plots of $\ln G$ versus $T^{-1/2}$ relationship for Ti@Si₁₆ and Zr@Si₁₆ assembled films.

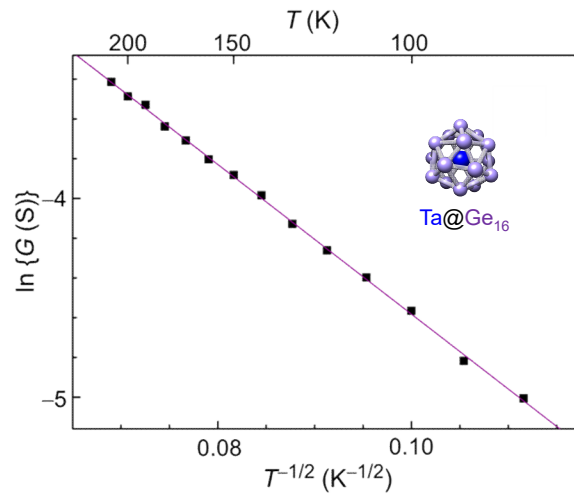


Figure S3. Plots of $\ln G$ versus $T^{-1/2}$ relationship for Ta@Ge₁₆ assembled films based on ES-VRH model.