Supporting Information

**Title**

*In-situ* Incorporation of Nanostructured Antimony in N-doped Carbon Matrix for Advanced Sodium-Ion Batteries

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**Figure S1** XRD patterns of samples obtained by annealing $Sb(Ac)_3$ at different temperature of (a) 150 ℃, (b) 250 ℃, (c) 350 ℃, (d) 450 ℃ and (e) 700 ℃ under Ar atmosphere for 2 h. # represents the peaks belong to $Sb_2O_3$ (JCPDS no. 72-1334) while * represents the peaks belong to $Sb_2O_3$ (JCPDS no. 71-0383).

**Figure S2** Raman spectroscopy of samples obtained from annealing $Sb(Ac)_3$ at 350 ℃ and 450 ℃ for 2 h, respectively.

**Figure S3** XRD patterns of Sb/C composite (G/N = 0.25/0.25) prepared at 450 ℃, 700 ℃ and 950 ℃ for 2 h, respectively.

**Figure S4** (a) TGA curves measured in air and (b) Full-survey-scan XPS patterns of $Sb@G_{0.25}N_{0.25}$-450, $Sb@G_{0.25}N_{0.25}$-700 and $Sb@G_{0.25}N_{0.25}$-950.

**Figure S5** Three-dimensional carbon sheets bubble generated by sugar-blowing strategy involving the thermal decomposition of the well-mixed glucose and $NH_4Cl$ at 950 ℃ for 2 h in Ar atmosphere.

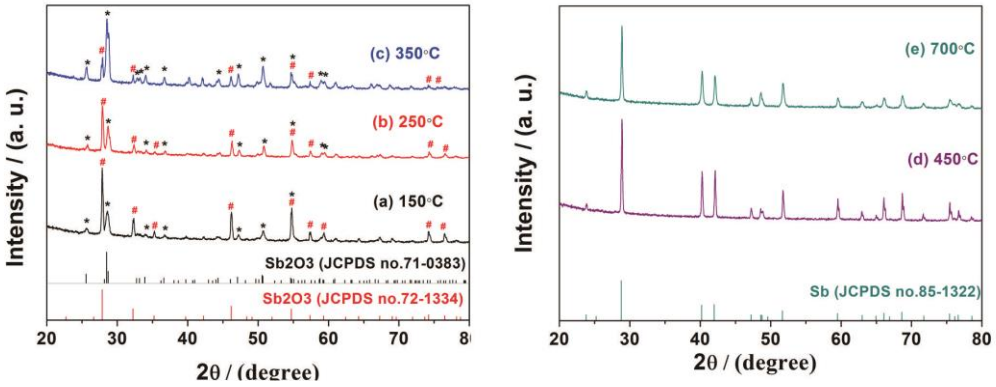
**Figure S6** SEM images of Sb/C composite prepared at different temperature of 450, 700 and 950 ℃, corresponding to (a-b) $Sb@G_{0.25}N_{0.5}$-450, (c-d) $Sb@G_{0.25}N_{0.5}$-700 and (e-f) $Sb@G_{0.25}N_{0.5}$-950, respectively.

**Figure S7** SEM images of Sb/C composite prepared with different amount of glucose at 950℃, corresponding to (a-b) $Sb@G_{0.125}N_{0.5}$-950, (c-d) $Sb@G_{0.25}N_{0.5}$-950 and (e-f) $Sb@G_{0.5}N_{0.5}$-950, respectively. The exposed hollow structure of Sb was marked with red circle in Figure S7b.

**Figure S8** SEM images of (a-c) $SnO_2$/C and (d-e) Sn/C composite. (f) XRD patterns of $SnO_2$/C and Sn/C composite.

**Figure S9** Electrochemcial performance of Sn/C composite for sodium storage at 200 mA $g^{-1}$. (a) The initial two cycles of charging-discharging curves (b) cycling test

**Figure S10** The Fourier transformed EXAFS of D 2 V electrode, $Sb@G_{0.25}N_{0.25}$-950 powder pellet and Sb reference.

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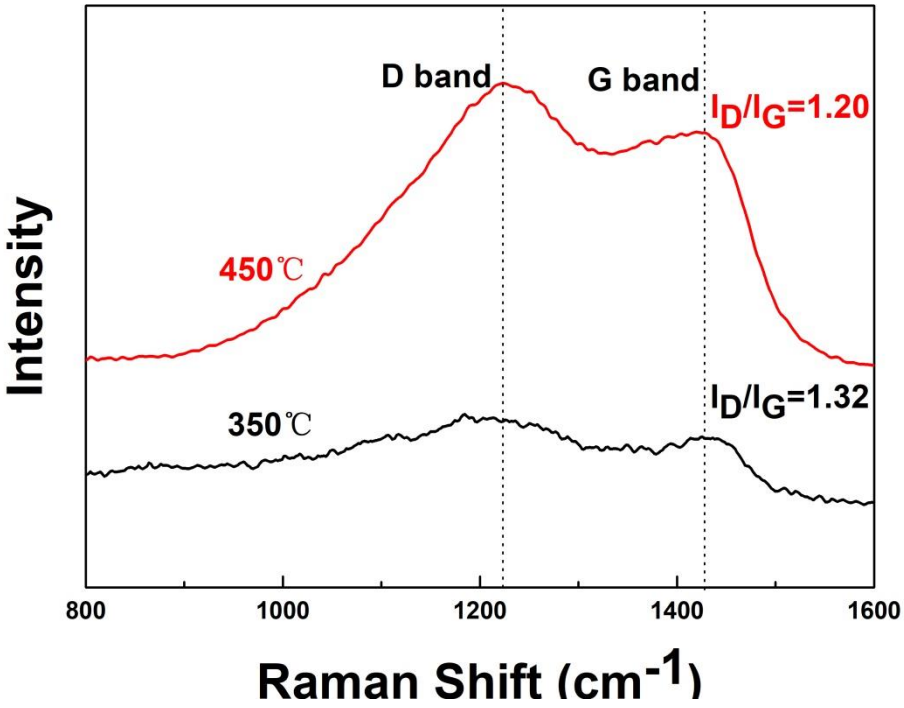


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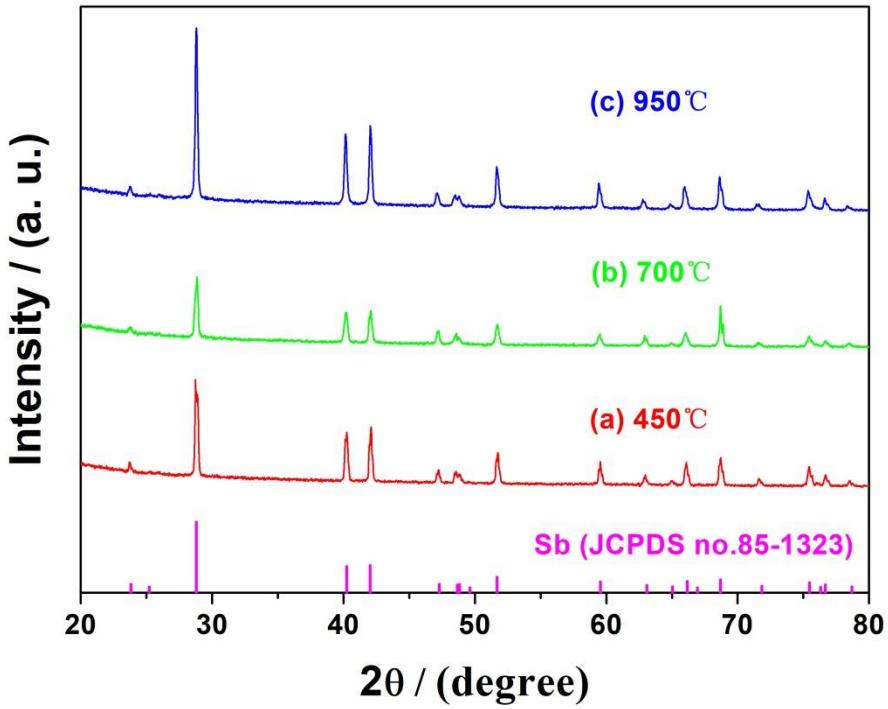
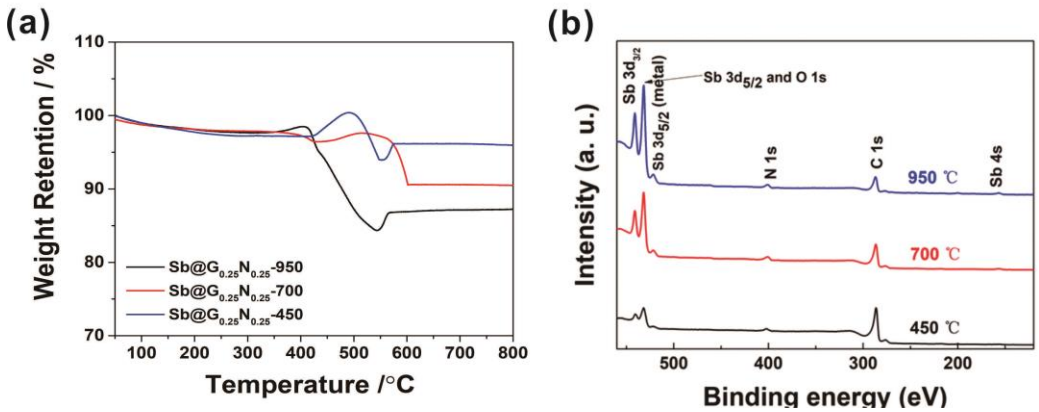



**Figure S3** XRD patterns of Sb/C composite (G/N= 0.25/0.25) prepared at 450 ℃, 700 ℃ and 950 ℃ for 2 h, respectively.

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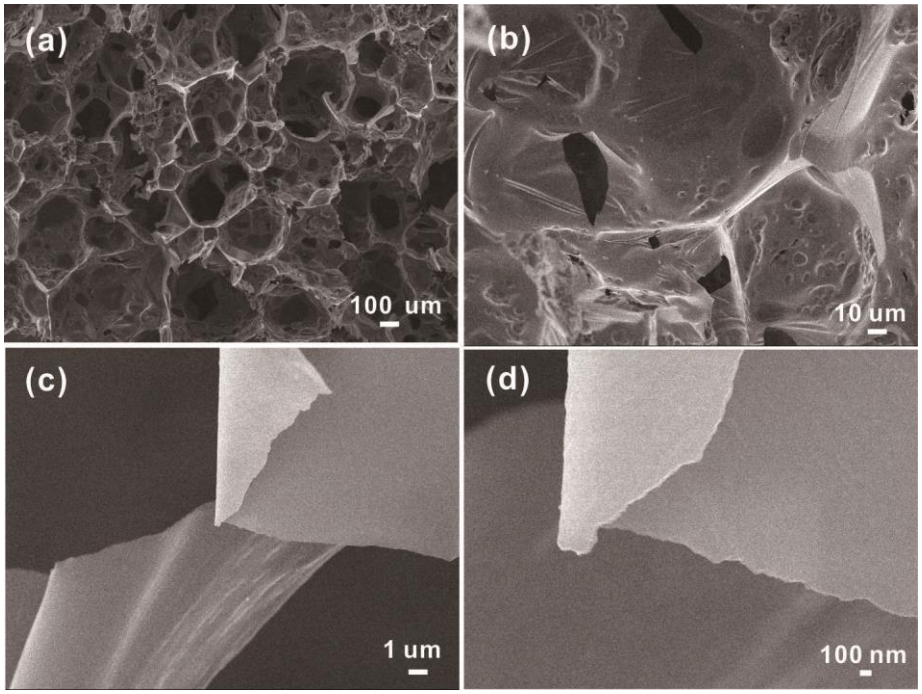


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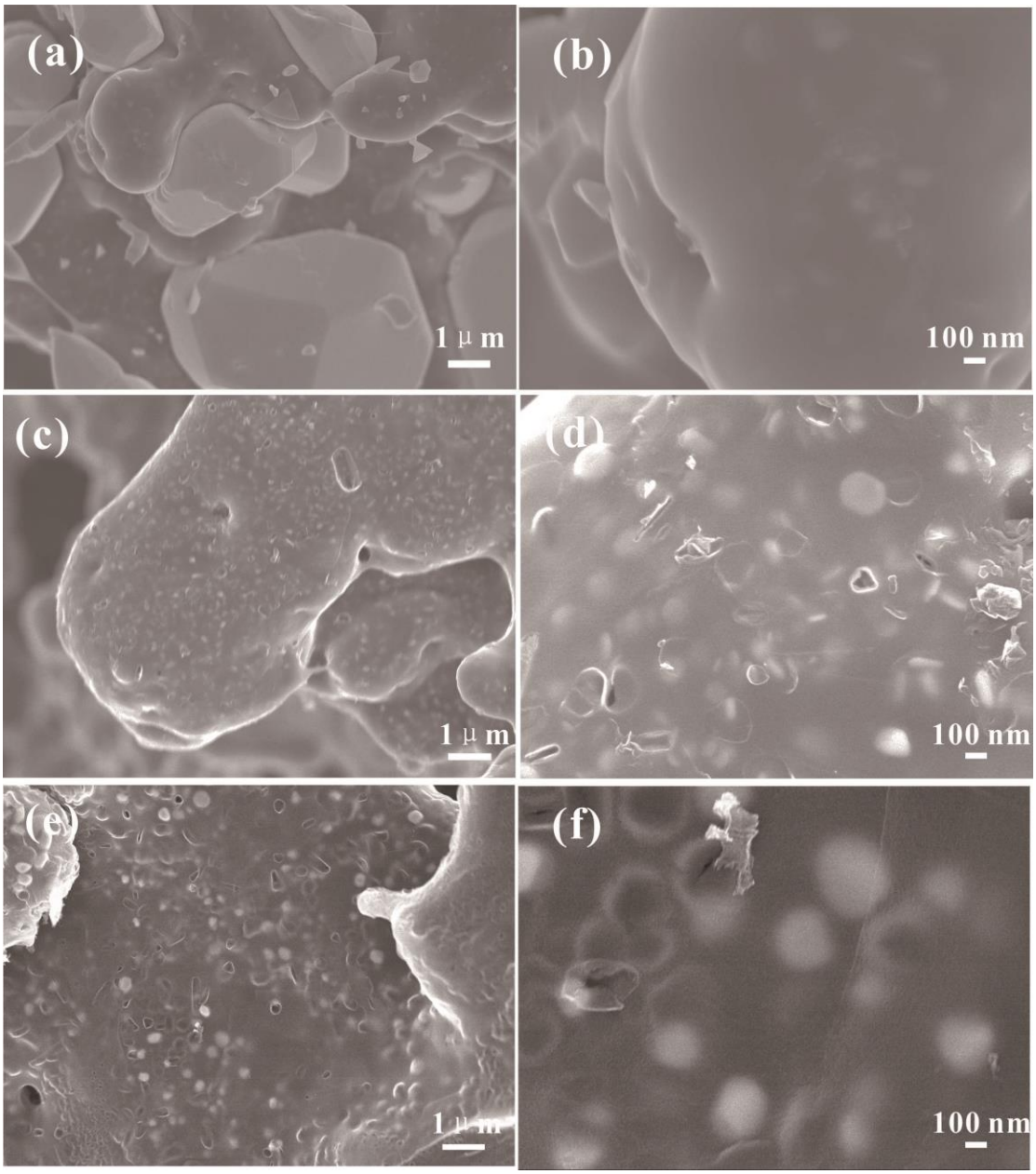


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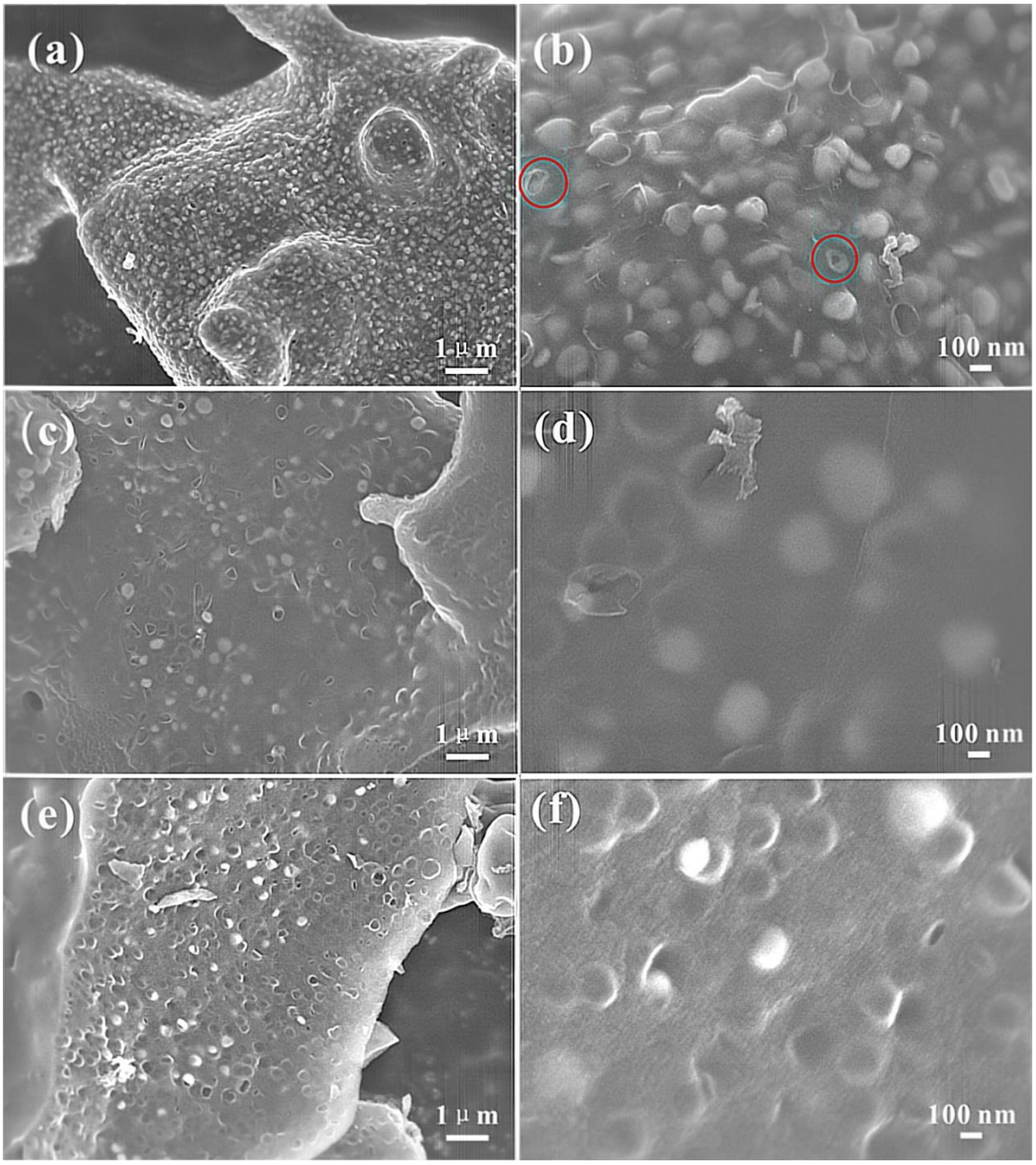


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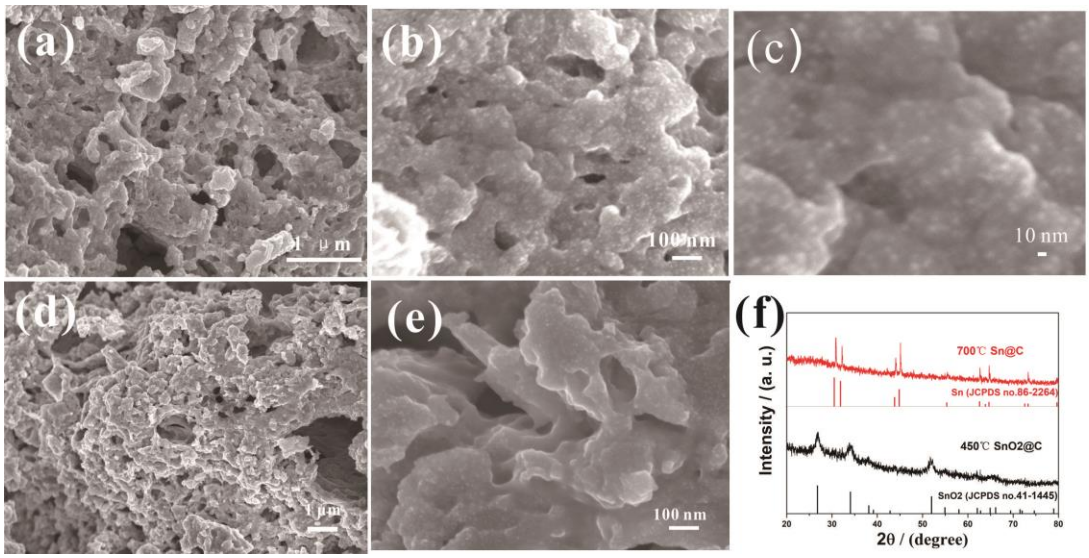


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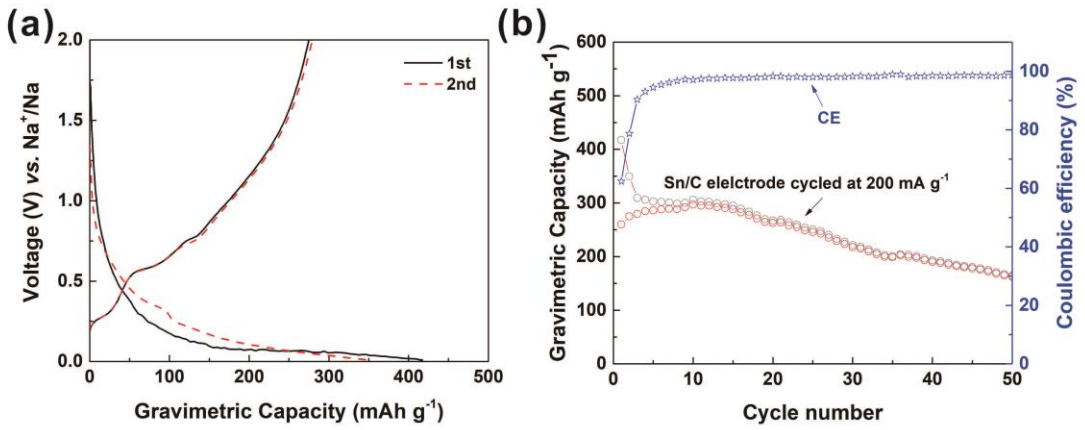


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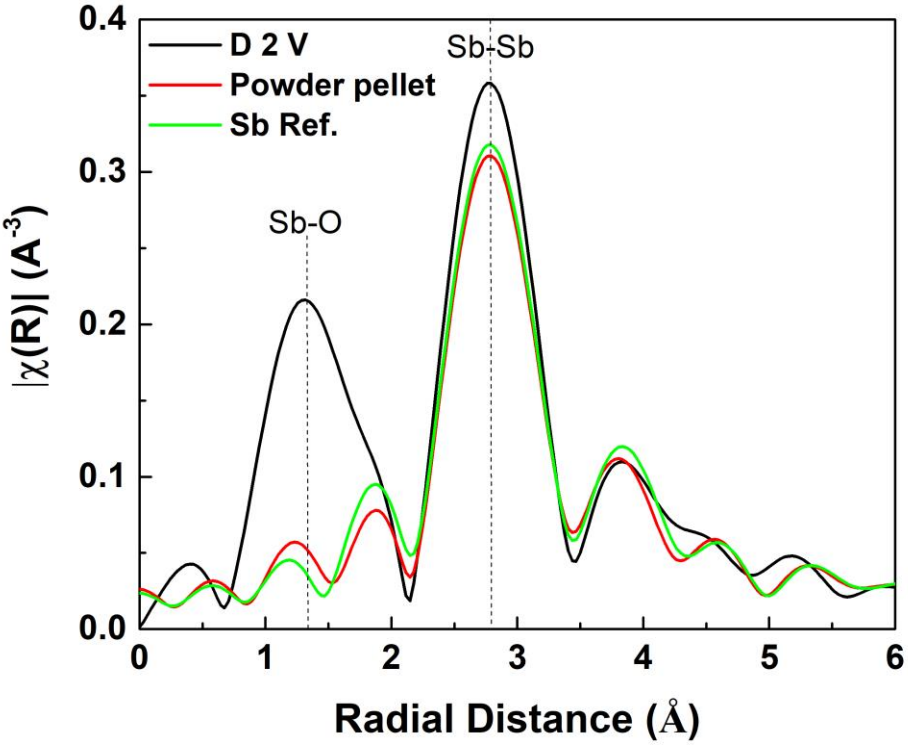


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