

Supplementary Data

Sr–Si diagram at Si contents of 55–100 at.% and crystal structure of SrSi_{2-x}

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S1. BSE images of arc-melted samples.

Fig. S1 shows the BSE images of arc-melted samples. Table S1 shows which phases constitute the microstructure.

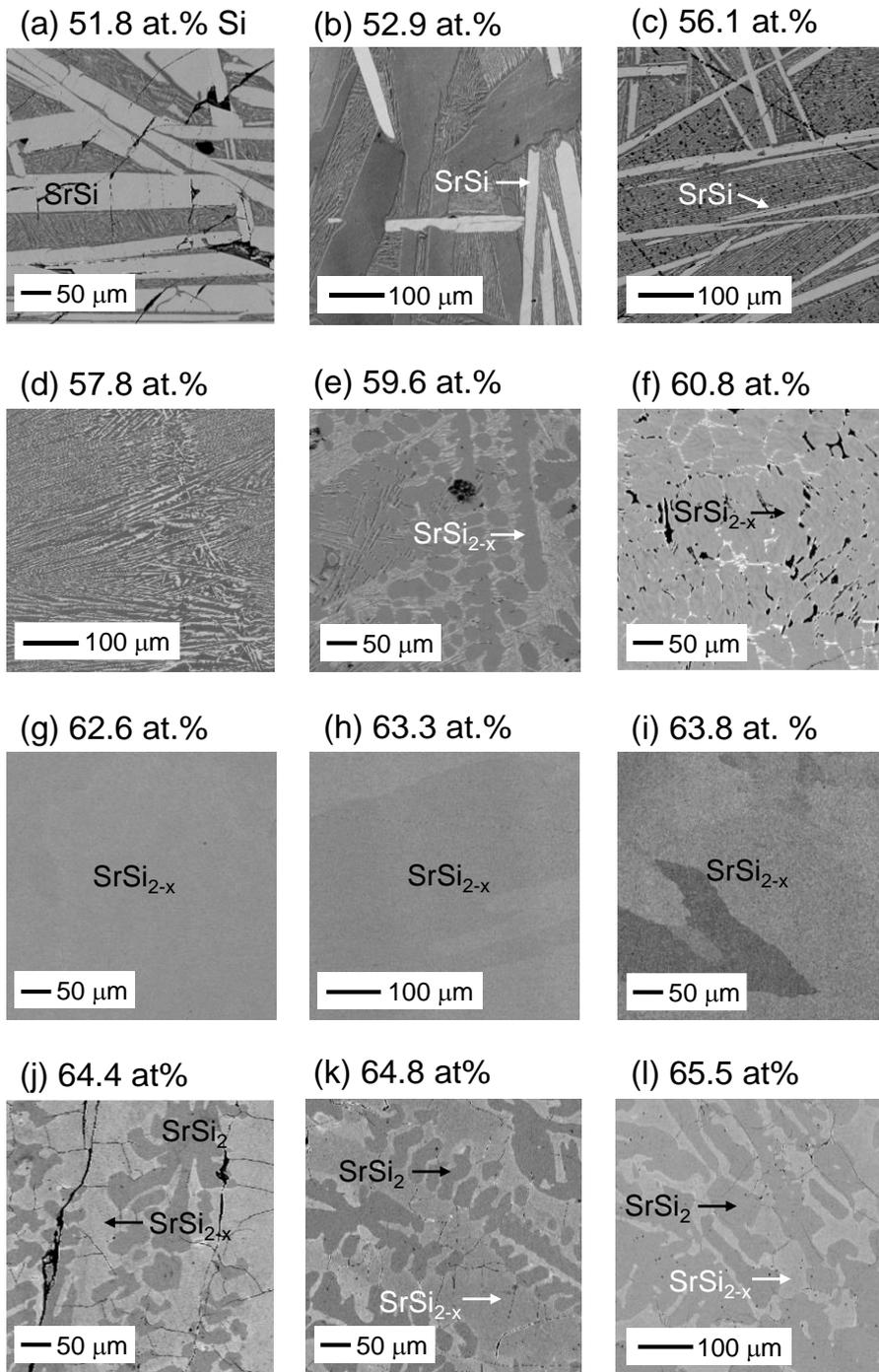


Fig. S1. BSE images of arc-melted samples.

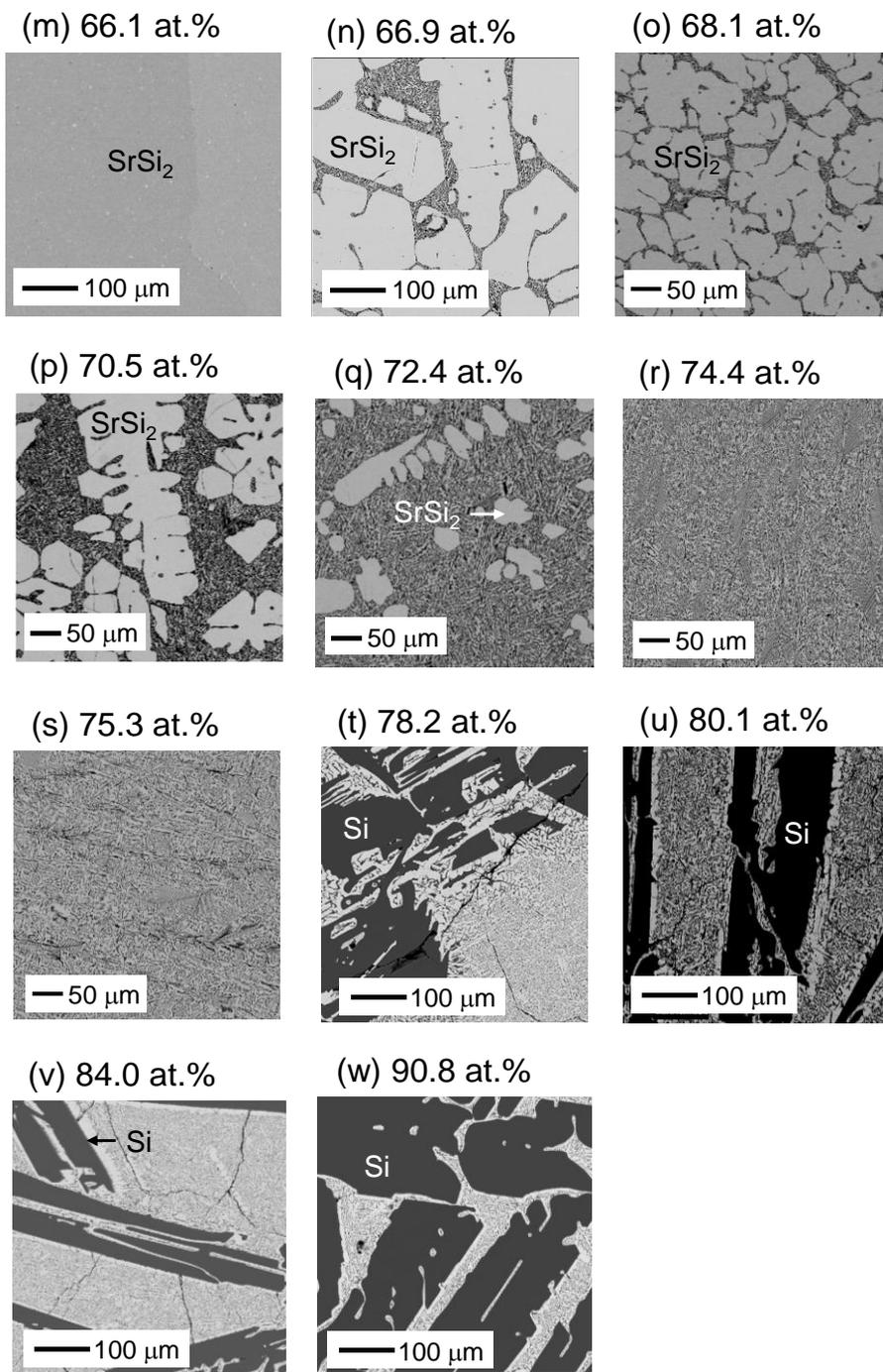


Fig. S1. BSE images of arc-melted samples (cont.).

Table S1. BSE image number, nominal Si content, observed Si content, and microstructure of arc-melted samples. * Undefined whether hypoeutectic or hypereutectic.

| BSE images symbols | Nominal Si content (at%Si) | Observed Si content (at%Si) | Microstructure |
|--------------------|----------------------------|-----------------------------|--|
| a | 45.0 | 51.8 | Hypoeutectic structure of SrSi and SrSi _{2-x} with a primary phase SrSi |
| b | 49.0 | 52.9 | |
| c | 54.0 | 56.1 | |
| d | 56.0 | 57.8 | Hypereutectic structure of SrSi and SrSi _{2-x} with a primary phase SrSi _{2-x} |
| e | 58.0 | 59.6 | |
| f | 60.0 | 60.8 | |
| g | 62.0 | 62.6 | Single phase SrSi _{2-x} |
| h | 62.0 | 63.3 | |
| i | 63.0 | 63.8 | |
| j | 64.0 | 64.4 | Two phases SrSi _{2-x} and SrSi ₂ |
| k | 64.0 | 64.8 | |
| l | 65.0 | 65.5 | Single Phase SrSi ₂ |
| m | 66.0 | 66.1 | |
| n | 67.0 | 66.9 | Hypoeutectic structure of SrSi ₂ and Si with a primary phase SrSi ₂ |
| o | 68.0 | 68.1 | |
| p | 70.4 | 70.5 | |
| q | 72.5 | 72.4 | Lamellar structure of SrSi ₂ and Si* |
| r | 74.6 | 74.4 | |
| s | 75.8 | 75.3 | Hypereutectic structure of SrSi ₂ and Si with a primary phase Si |
| t | 78.0 | 78.1 | |
| u | 80.0 | 80.1 | |
| V | 83.5 | 84.0 | |
| W | 90.0 | 90.7 | |

S2. DTA curves of Si arc-melted samples with 63.3–66.1 at. % Si on heating.

Fig. S2 shows the DTA curves of Si arc-melted samples with 63.3–66.1 at. % Si on heating. The arrows show transformation temperatures.

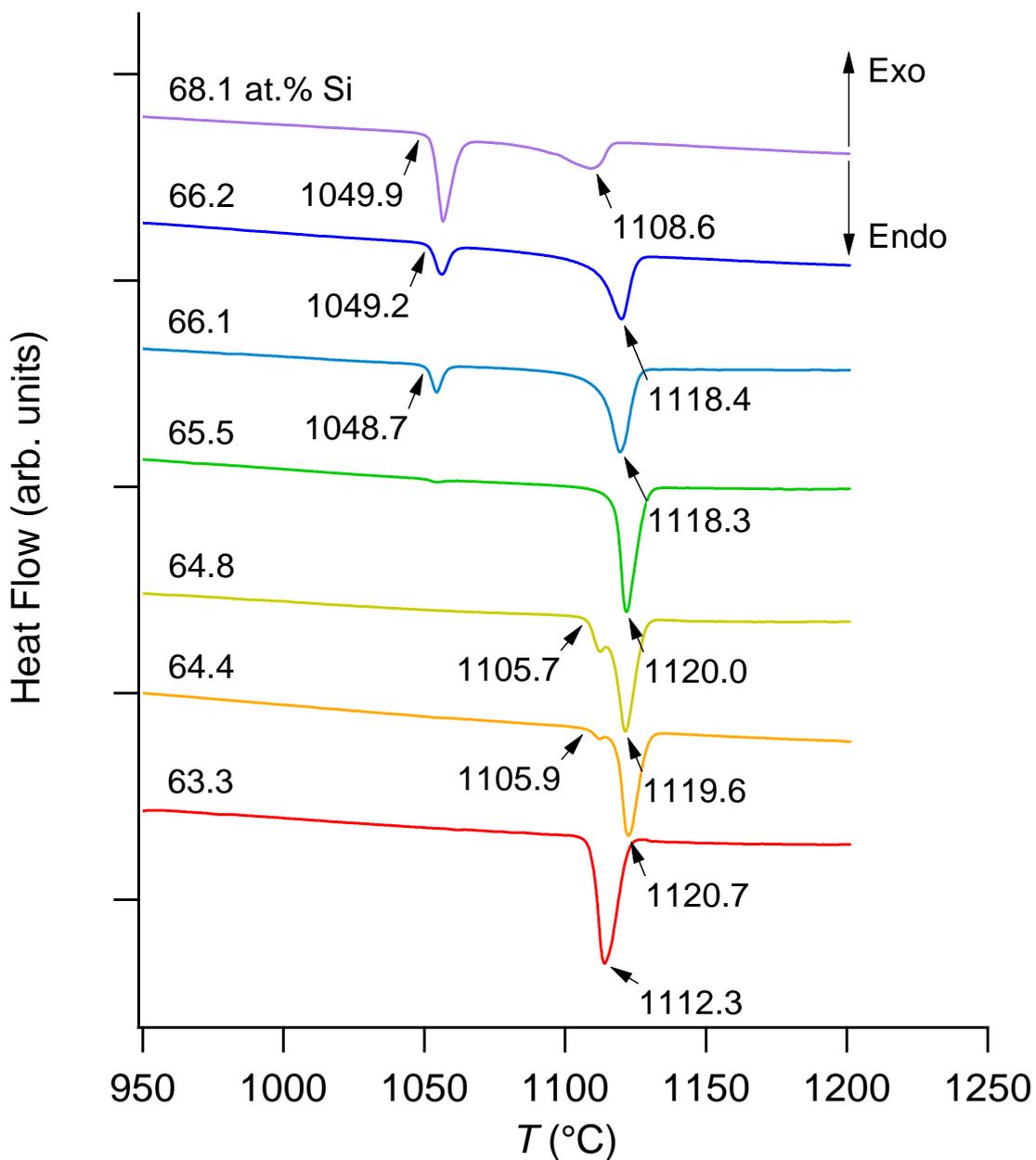


Fig. S2. DTA curves of Si arc-melted samples with 63.3–66.1 at. % Si on heating. The arrows show the transformation temperatures.