

The effect of the melt temperature of metallurgical silicon on the process of its plasma chemical purification

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Received 15.07.2024; revised 5.09.2024; accepted 18.11.2024

The influence of the melt temperature of metallurgical silicon on the efficiency by plasma chemical refining using an electron beam has been studied. The following processes take place during plasma chemical refining: firstly, the evaporation of volatile impurities due to the rapid heating of metallurgical silicon using an electron beam; secondly, the transfer of impurities that are difficult to evaporate in vacuum into their volatile compounds in a chemically active oxidizing electron beam plasma. It has been established that the removal of different groups of impurities must be carried out at different temperatures in the range 1300–1900 °C.

Keywords: plasma-chemical refining of metallurgical silicon; electron-beam plasma; supersonic jet; melt temperature.

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