

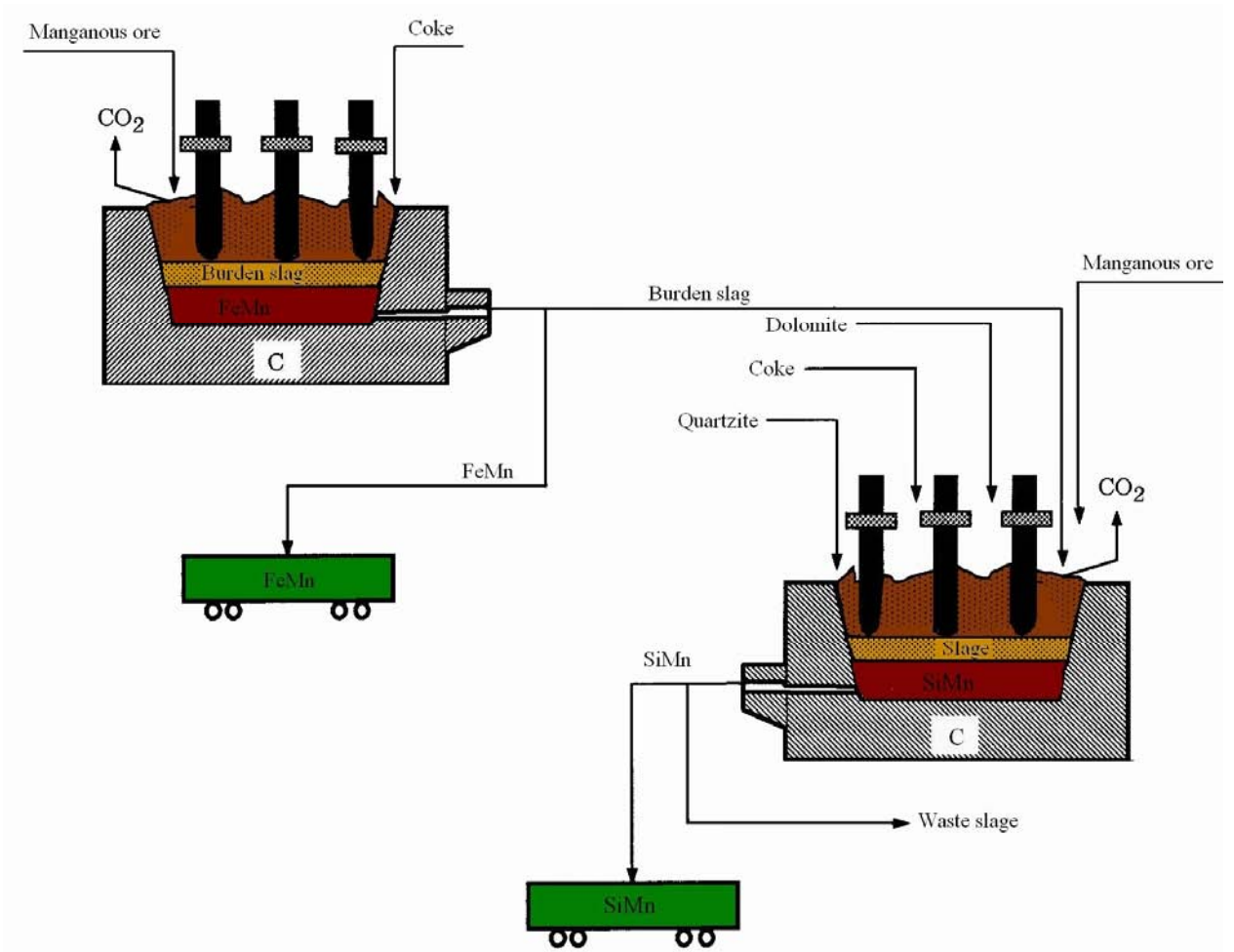
TECHNOLOGY OF LOW – CARBON MANGANESE SILICON

At the production of manganese ferroalloys, techno-economic indexes largely depend on through extraction of manganese from initial raw material in the prepared products. At the same time not unimportant is quality of the got ferroalloys and necessity in them at the market. At present time demand for high-silicon low-carbon (to 0,1 %C) manganese silicon increases, which more often finds application not only as a reducer during silicothermal processes but also as an alternative of expensive nickel at the production of stainless steel .

The National Metallurgical Academy of Ukraine has a great experience in development of technological charts of manganese alloys production, and, particularly, productions of low- carbon manganese silicon, including:

- determination of optimal geometrical and electrical parameters of ore-smelting electric furnace, power from 7,5 to 27,6 MWA;
- development of lining construction
- calculations of material, power balances and gas-dynamic modes of process by the special developed software;
- calculations of thermotechnical parameters of work stove lining;
- development of the automated technological process control systems;
- development of formula of electrode mass and modes of kilning self baking electrodes of large diameter;

For production low- carbon manganese silicon NMetAU jointly with SPF «Tehnosplavy» developed high-performance two-stage technology, which provides smelting of high-carbon ferromanganese and resmelting slag from manganese ore by the Flux-free method, resmelting slag which in future is used for the production of high-silicon low-carbon manganese silicon.



This technology provides the production of manganese silicon with carbon content – 0, 05–0, 1% in ore-smelting furnaces by power to 27, 6 MWA, and the offered operating regime of furnace with general technological measures and with the original construction of lining provide safe exploitation of furnace during 15–20 years.