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## **The effect of the distance between the anod and stub and the operation of the gray cast iron hi phosphorus (HPGI)**

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**Abstract:** The subject of the challenge that has been taken into consideration by the managers and owners of the melting industry in the world is the topic of energy storage in aluminum smelting. The requirement to reduce costs - reducing environmental pollution - reducing greenhouse gas emissions and PFC compounds all of them have to make the existing processes corrected first and then address the issue of reducing energy consumption. The researchers are aware of the energy issue that, in the event of increased resistance to the aluminum smelting system, they will increase energy consumption and reduce ampere efficiency and increase environmental pollution.

In this regard, the main two are the energy losses and the effect of changing the structure of high-phosphorus gray iron and the role of this change in the electrical conductivity of cast iron, which is one of the important factors in reducing energy consumption.

**Keywords:** hpgi- graycast iron- steel stub-pfc-cast iron thimble