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## **WELDING METALLURGY FOUNDER M. SLAVIANOV**

### **Summary**

Mykola Slavianov (23.04.1854 – 27.09.1897) advocated continuing the traditions of the great scientist, academician V. Petrov, who in his time investigated a new physical phenomenon - electric arc and showed the mankind the heat usage of the metal melting.

The name of Mykola Slavianov is associated with the development of metallurgical fundamentals of the outstanding Russian invention - electric arc welding and hot welding methods with the metal electrode.

In his first scientific paper M. Slavianov used metallic electrode giving formed and heated the welding place. He developed a method that got nowadays the name of hot welding method. M. Slavianov faced an extremely difficult question – the arc electric shock power and its stability while working. In order to maintain an arc

between the metal electrode and the product he developed a special electric differential regulator - makers. As the power source of the arc M. Slavianov constructed a special electric generator that was the predecessor of modern welding generators.

His invention M. Slavianov did not accidentally call an electric metal casting, he believed that the main difference between his method is not in direct connection of metals by heating an electric arc, and pouring with liquid metal received by heating with metallic arc electrode bath prepared by an appropriate formation of the junction or product.

To improve the metal quality were used deoxidants (ferrosilicium and ferro aluminum) and alloying additives, especially ferromanganese, which was introduced into the weld pool. Deoxidants and alloying additives were developed also for copper and bronze.

The way of preheating designed by M. Slavianov has preserved its value till nowadays. The metallurgical fundamentals and method essence of the welding bath protection, invented by M. Slavianov contain the same ideas that have been developed in the modern method of automatic submerged arc welding.

***Keywords:*** *inventor M. Slavianov, welding, surfacing, parts restoration.*