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**THE FOUNDER OF THERMOPHYSICAL BASES OF
PROCESSING AND WELDING OF METALS AND PLASMA
ROCESSESIN METALLURGY - ACADEMICIAN M. RYKALIN**

Summary

Mykola Rykalin (27.09.1903 - 25.05.1985) advocated continuing of the great scientist, academician V. Petrov’s traditions, who investigated the new, at that time, physical phenomenon - the electric arc, and showed mankind the heat use to melt the metal.

The name of Academician Mykola Rykalin is closely associated with the formation and development of the most promising way to restore parts - electric arc welding. His elaborated theory of heat during welding processes became the foundation for the development of technological processes which influence on the substance with highly concentrated energy sources - thermal plasma, electron beam, ion streams, the laser radiation.

Basic research activities of corresponding member M. Rykalin were held at the Academy of Sciences, under whose leadership the work was conducted, aimed at studying energy physical, physical-chemical and technological characteristics of the arc.

Deals with the work of specialists “Institute of Metallurgy and material science behalf AA Baikov” under the direction of M. Rykalina, their contribution to the development process to maximize the concentration of thermal and kinetic energy condensed arc.

Mykola Rykalin’s works devoted to the study of heating and cooling of the metal during welding, heat distribution in welding products, and the influence of these processes on melting and structural changes in the metal, are summarized in the monographs "Heat basics of welding" (1947) and "Calculations of thermal processes in welding" (1951), which were awarded with prizes of the Academy of Sciences in 1949 and 1954. In his monographs for the first time in the world technical literature the thermal welding bases systematic analysis was given. M. Rykalin’s works differed by close connection of theoretical views with the needs of engineering, constant inspection of mathematical conclusions into practice.

Academician M. Rykalin their efforts have made an invaluable contribution to the development of electric arc welding

Keywords: inventor M. Rykalin, welding, thermal processes theory.