The first scientific-technical conference "Theory and Practice of Plastic Deformation — 96" was held on October 8-10, 1996 at the Moscow State Institute of Steel and Alloys (MSISA). The conference was devoted to the memory of Petr Ivanovich Polukhin, whose name is linked with an important stage in the growth of the Institute. Polukhin was in large part responsible for establishing the Institute as a leader among the metallurgical institutions of the country and making it an authority on the world level.

As a brilliant talent and scientist of uncommon personal stature, P. I. Polukhin made his mark in the founding and development of vital educational institutions for engineers specializing in the rolling of sections, tubes, and flat-rolled products. The writings of Polukhin — including 46 monographs and textbooks and more than 370 scientific articles — and the more than 500 inventions with which he is credited touch on nearly all of the basic aspects of the plastic deformation of ferrous and nonferrous metals and refractory and rare metals and their alloys (Polukhin's work was discussed in greater detail in issue No. 7 of Metallurgist for 1996).

The work of the conference was coordinated by the scientific committee under the direction of Institute Rector Prof. Yu. S. Karabasov. The committee included MSISA professors L. V. Kozhitov, A. M. Galkin, V. T. Zhadan, A. V. Zinov'ev, B. A. Romansiev, O. M. Smirnov, V. N. Khloponin, and V. N. Shcherba.

The conference stirred a great deal of interest among the scientific, teaching, and business communities, with representatives in attendance from Moscow, Ural, Siberian, and Ukrainian schools whose curriculum includes metal-shaping. A total of 217 research papers was delivered at the meeting — 178 from Russia, 26 from the Ukraine, 7 from Kazakhstan, 5 from Belarus, and 1 from Poland. Nine reports were delivered by metallurgical and machine plants, eight by industry-affiliated and academic institutes, and twenty-five from colleges and universities. More than 100 professors, doctors, and candidates of science were among the attendees.

The plenary session heard a speech delivered by Prof. A. V. Zinov'ev that was entitled "P. I. Polukhin — Eminent Scientist, Teacher, and Organizer." Also speaking was Corresponding Member of the Russian Academy of Sciences S. P. Efimenko on "Some Predictions on the Development of the Theory and Practice of Metal-Shaping" and Prof. V. I. Zyuzina on "Rolling Mills at the Bridge Between the Twentieth and Twenty-First Centuries." Zyuzina's talk generated special interest and discussion among the conferees. The conference then broke up into eight sections: "Production of Hot-Rolled Sheet and Strip"; "Production of Cold-Rolled Sheet and Strip with Protective Coatings"; "Section-Mill Practice;" "Tube Production"; "Forging and Stamping;" "Pressing and Drawing;" "Properties of Metals in Shaping Operations;" "Methods of Studying Shaping Operations."

The best-attended sections were the "Production of Hot-Rolled Sheet and Strip" and the "Production of Cold-Rolled Sheet and Strip with Protective Coatings," headed by Professor and Dr. of Engineering Sciences V. N. Khloponin (MSISA), Professor and Dr. of Engineering Sciences Yu. V. Konovalov (Donetsk State Technical University, Ukraine), Professor and Dr. of Engineering Sciences A. V. Zinov'ev (MSISA), and Professor and Dr. of Engineering Sciences E. A. Garber (Cherepovets State Industrial Institute), respectively.

The conferees were particularly interested in the reports delivered by Yu. V. Konovalov et al. (Donetsk STU, Ukraine), "Evaluating New Technological Solutions in Rolled-Plate Production." V. M. Salganka et al., "Mathematical Modeling of the Reverse Hot-Rolling of 'Infinite' Strip on a Combination Linear-Rolling Mill," and V. N. Khloponin et al.
Fig. 1. Rector of the MSISA and Professor Yu. S. Karabasov opened the conference.

(MSISA), "Effect of Continuous Axial Displacement of Work Rolls (CADWR process) on Their Temperature Profile." A project undertaken by S. S. Kolpakov et al. (MSISA — Novolipetsk Metallurgical Combine) dealt with aspects of predicting the structure and mechanical properties of cold-rolled steel sheet from the hot-rolling parameters in a stable cold-rolling technology. A method for systematically evaluating lubricants for cold-rolling was proposed by V. K. Belosevich et al. (MSISA — MNTM).

The reports delivered by A. E. Titlyanov et al. (MSISA) included results of a study of the effect of the treatments of gas-thermal steel coatings on wear resistance, the goal here being to create surface layers with the requisite service properties.

The work of the section "Section-Mill Practice" was guided by Professor and Dr. of Engineering Sciences V. G. Zhadan (MSISA) and B. A. Nikiforov (Magnitogorsk Mining-Metallurgical Academy). All of the papers presented in the section, dealing with aspects of the theory and practice of section-rolling, were of keen scientific and practical interest. For example, S. M. Zhukov et al. (Institute of Ferrous Metallurgy of the National Academy of Sciences of the Ukraine) proposed an original method for rolling on continuous mills. The method entails the use of undriven working stands. Zhukov also presented a mathematical model of the process, which helps conserve energy and materials.

The meeting headed by V. S. Berkovskii (MSISA) examined metal-shaping and the power parameters of rolling in passes. A mathematical model of the process was constructed and realized numerically on a computer.

G. M. Shul’gin et al. (Donetsk STU, "Krivorozhstal" Combine) proposed a method of two-groove rolling and partitioning for the production of reinforcement steel and other sections.

The report delivered by D. A. Fedoritsev et al. (MSISA) concerned the creation of a method of rolling high-precision shapes in a single production line with the use of resistance heating and high-temperature thermomechanical treatment. The method makes it possible to shorten the production cycle, improve product quality, and realize significant savings compared to the existing technology.

In the section "Tube Production," headed by Professor and Dr. of Engineering Sciences B. A. Romantsev (MSISA) and Professor and Dr. of Engineering Sciences V. N. Danchenko (State Metallurgical Academy of the Ukraine), a large group of undergraduates and MSISA post-graduate students sat in the meeting together with renowned scientists — specialists in the hot and cold deformation of tubes and hollows. The report given by V. N. Danchenko et al. (State Metallurgical Academy of the Ukraine) examined features of plastic deformation in the drawing and extrusion of multilayered tubes with the goal of developing an efficient technology for making them. Also discussed were problems related to the continuous rolling of tubes in a multi-stand mill with a movable supporting mandrel.

A. A. Bogatov talked about some aspects of the development of the mechanics of deformable bodies and the contact interaction and fracture of metal during plastic deformation, the aim being to improve the technology and equipment for the production of cold-worked tubes.

Those attending the meetings of the section "Forging and Stamping," headed by Professor and Dr. of Engineering Sciences O. M. Smirnov (MSISA) and Professor and Dr. of Engineering Sciences N. D. Lukashkina (Moscow Evening Metallurgical Institute), heard a discussion of some of the problems and technological aspects of operations performed in the