



National Technical University "Kharkiv Polytechnic
Institute"
"Metal Forming" department

The proposals of the "Metal Forming" department
for scientific and technical cooperation

“Metal Forming” department

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- **Head of the Department** *Plesnetsov Yuri Alexandrovich* (e-mail: plesnetsov@gmail.com)
- **Speciality:** "Applied Mechanics"
- **Specialization:** "Equipment and Technologies of Metal Forming"

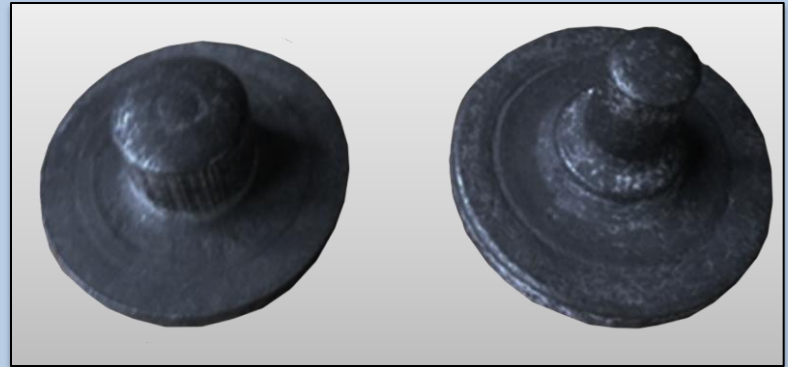
Scientific research themes:

- - the scientific and technological bases of processes of precision forging;
- - the scientific and technological bases of the extrusion process;
- - the scientific and technological bases of production processes of bent rolled profiles;
- - computer simulation of metal forming processes.

Scientific and technological bases of processes of precision forging



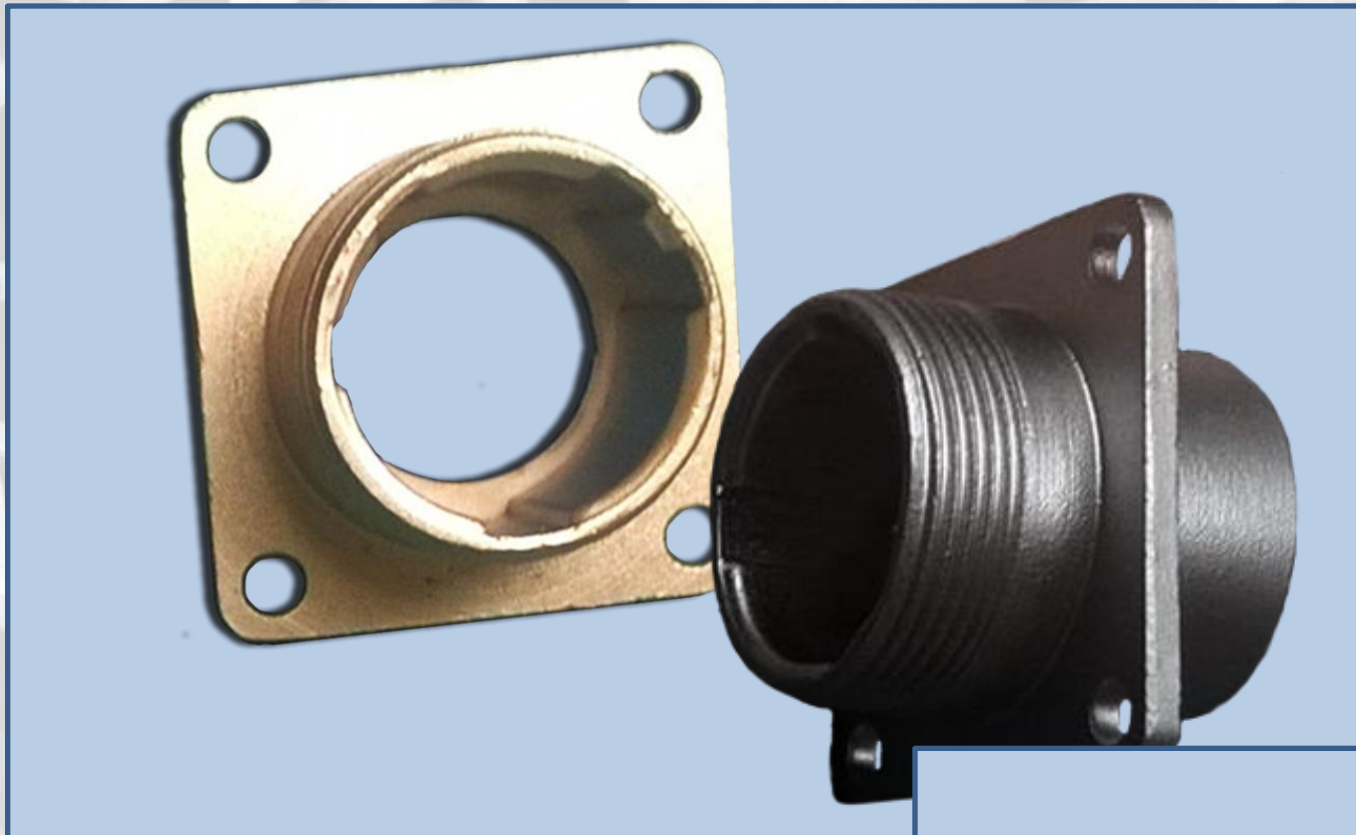
"Valve" forging



"Flange" forging

The technology is implemented on the a 250 ton hydraulic press of the "Metal Forming" Department

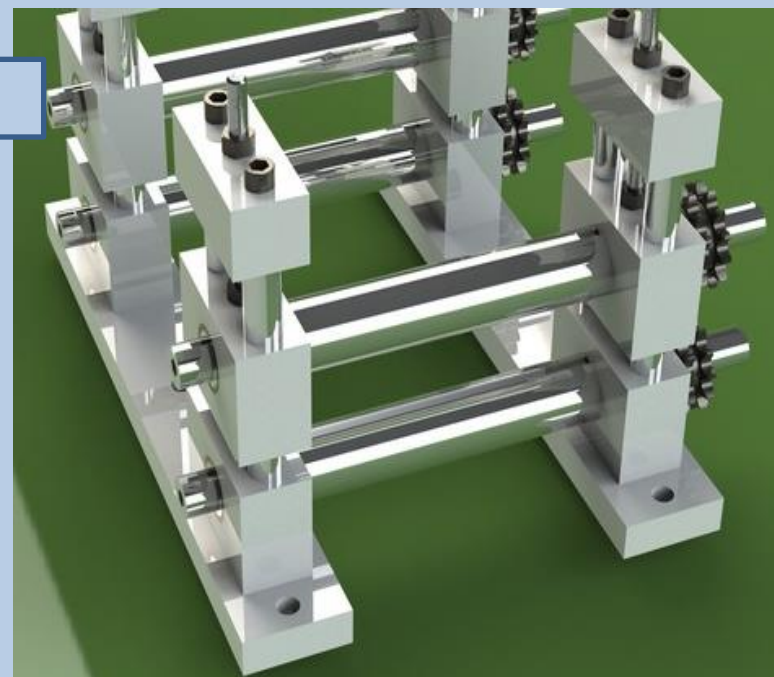
Scientific and technological bases of the extrusion process



Hull connectors of various types

Scientific and technological bases of production processes of bent rolled profiles

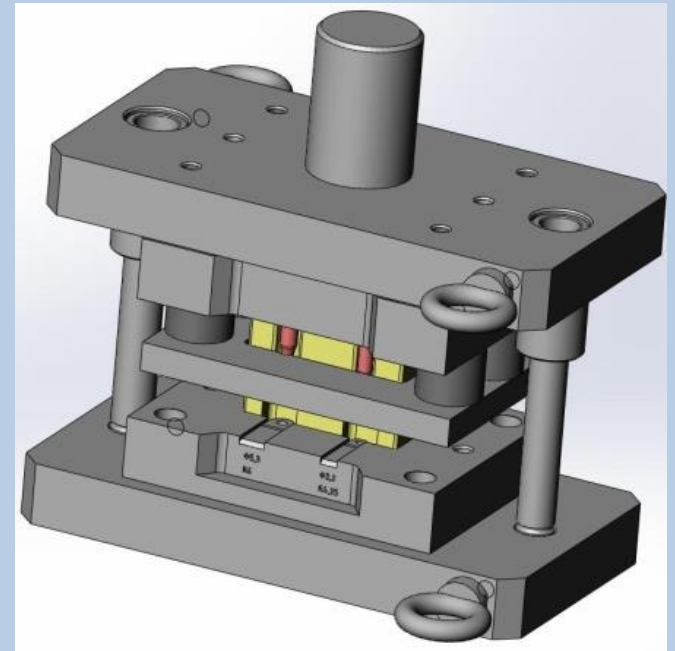
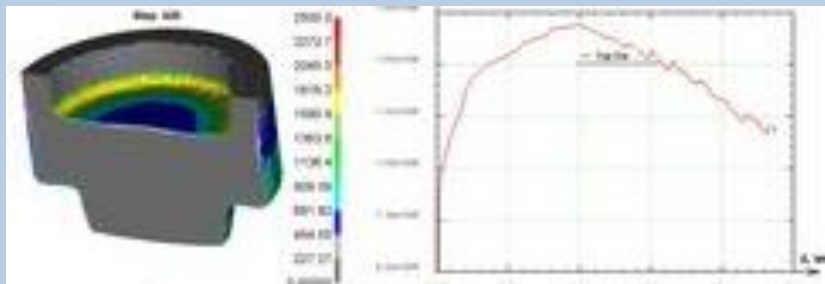
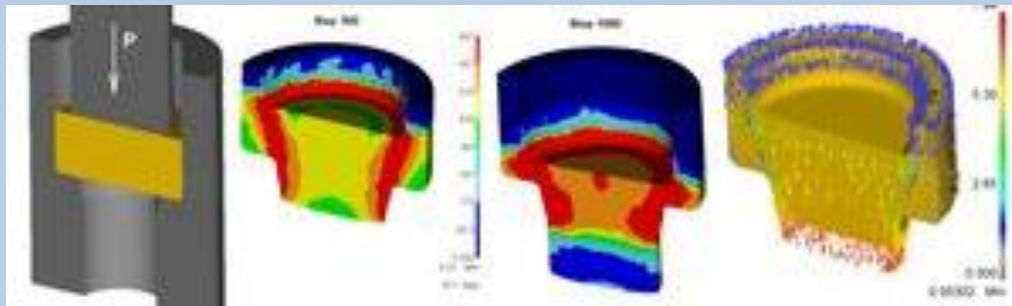
Roll forming mill roll stand



Flat pipes



Computer simulation of metal forming processes



Combined extrusion process simulation

Dear colleagues!

We invite you to take part in the annual international scientific and technical conference "Resource saving and energy efficiency of processes and equipment for pressure processing in machine building and metallurgy", which traditionally takes place in the last ten days of November at the National Technical University "Kharkiv Polytechnic Institute".

The purpose of the conference is:

- in the analysis of the current state and prospects for the development of pressure treatment in machine building and metallurgy;
- in sharing experience and raising the level of awareness of enterprises and organizations about the possibility of technological processes and equipment for processing pressure to ensure resource saving and energy efficiency in engineering and metallurgy;
- in determining the possibilities of control and improving the quality of products in engineering and metallurgy.

The main issues that are proposed for discussion are:

Section 1. Current state and prospects for the development of metal forming in mechanical engineering.

- 1.1. Theoretical analysis and modeling of processes of forging and stamping production.
- 1.2. Research of technological processes of forging and stamping production.
- 1.3. Analysis and improvement of forging and stamping equipment.

Section 2. The current state and prospects for the development of metal forming in metallurgy.

- 2.1. Theoretical analysis and modeling of metal forming processes in rolls.
- 2.2. Research of technological processes of rolling production.
- 2.3. Analysis and improvement of rolling equipment.

Section 3. Conformity assessment, certification, metrological support of production in metal forming.

"Metal Forming" department proposals for scientific and technical cooperation

Subjects of research works

- Improving technologies of precision forging
- Improving technologies of extrusion.
- Improvement of bent rolled profiles production technological processes.
- Creating a new generation of roll forming equipment.

Relevance of scientific research.

- Conservation of resources in engineering and construction, energy efficiency of stamping and rolling mills.

Purpose of scientific research.

- Development of the scientific and technological bases of the processes of production of high accuracy parts. Creating a new generation of equipment and tooling.

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