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**DESIGN OF EXHAUST SYSTEM FOR LASER INSTALLATIONS
AND 3D PRINTERS IN LABORATORIES
OF SEVERSK TECHNOLOGICAL INSTITUTE**

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Modern scientific research, using laser technologies and additive production poses special requirements for ventilation systems. When operating the equipment, harmful substances such as toxic gases metal and polymer dust, aerosols are released, that creates a potential danger to students and requires special air purification solutions.

The development of an effective exhaust system for such laboratories should solve several key problems. First, it is necessary to ensure the safe removal of hazardous emissions directly from the work area. For laser installations, these are products of ablation and thermal decomposition of materials, and for 3D printers – volatile compounds and fine particles.

Secondly, the system must take into account the specifics of different technological processes. When working with metal powders in 3D printing, it is necessary to prevent the formation of explosive mixtures, and for laser cutting, effective removal of heated air is required.

The developed exhaust system for Seversk Technological Institute will consider all these aspects, providing safe conditions for scientific work with modern equipment. Its implementation will create an optimal environment for research in the field of laser technologies and additive production.

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