

TECHNOLOGIES FOR IMPROVING FILTERING SYSTEMS FOR THE NEUTRALIZATION OF HAZARDOUS CHEMICAL SUBSTANCES

Halak O.V., Marushchenko V.V.

Military Institute of Armored Forces of the National Technical University "KhPI", Kharkiv

In modern condition of use of weapons of mass de-struction by terrorist organization, the armed conflict in Syria, during which chemical weapons were used, the aggravation of the situation in the East of Ukraine, where a large number of chemically dangerous objects are located, violation of the UN International Convention on the Prohibition of the Use of Chemical Weapons by some countries, there is a high probability of subver-sive and terrorist acts committed by sabotage and re-connaissance forces with the use of extremely hazard-ous substances.



Fig. 1 NATO's filtering systems for protection against chemicals that are hazardous

It is determined in that human progress is impossible without the use of new technologies. With the development of technological progress and the emergence of modern technologies and materials special danger today is man-made disasters, especially disasters on chemically dangerous enterprises.

Increasing the effectiveness of collective protection systems from HCHS, the possibility of installing catalytic materials for the neutralization of toxins of different nature in the existing structure will enable to improve the performance characteristics of FVU without significant structural changes and substantial material costs. Promising materials that are capable of effectively neutralize (decompose) toxins of different nature at high efficiency performance over a wide range of temperatures and corrosion resistance are heterogeneous systems of titanium alloys.

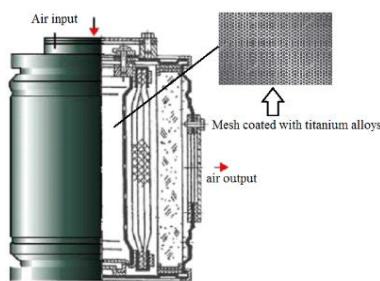


Fig. 2. Installation of a mesh coated with titanium dioxide in the collective protection system

The proposed modernization approach involves the additional installation of a grille (mesh) coated with a layer of catalytic material in the absorbent filters of a collective protection system on armored vehicles (Fig. 2).