

hydroxides of two or more metals at the same pH value achieved better results than the case of separate deposition of each metal. In order to achieve the best wastewater is recommended to use sodium hydroxide (NaOH), because it is highly reactive; precipitates obtained with its use, are relatively clean, easily washed, processed and effectively separated during clarification. This method is the most versatile and easy to use.

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## **THE PROSPECTS OF INTRODUCTION OF ALTERNATIVE METHODS OF ASSESSMENT OF SAFETY OF PERFUMERY AND COSMETIC PRODUCTS IN REPUBLIC OF BELARUS**

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The attitude of the person towards animals, including experimental, is one of key questions of bioethics. In the last decade there is an active process of an institutionalization of the principles of the ethic attitude towards animals that is reflected in the marine life protection acts of animals from cruelty adopted in many countries.

Striking example of the solution of an ethical dilemma of use by the person of animals for ensuring own safety, is the prohibition of production and sale of the cosmetics tested for animals, accepted in the EU in 2013. This law was preceded by long-term organizational, research and legislative work on creation of the national and international centers developing and implementing alternative evaluation methods of safety of cosmetics.

So, in 2011 the EURL-ECVAM laboratory (European Union Reference Laboratory for alternatives to animal testing) which is engaged in development and check of new alternate methods and recommendations to their use, independent examination was open. Inclusion of the alternate methods in guides of OECD (Organization for Economic Co-operation and Development) makes them officially available worldwide.

Similar approaches are applied in the USA, Norway, Israel, India and New Zealand where developed infrastructure (the research centers of alternatives) and legal base for introduction of alternatives is created.

Today tens of alternatives of in vitro (use of cell-like cultures and tissues of the person, for example, such as EPISKIN), ex vivo (BCOP test), in silico (computer model operation) are already developed.

Many known cosmetic companies finance development of alternatives to toxicological testing for animals; on social networks "white" and "black" lists of cosmetics are popular.

In Belarus the bill "About the Treatment of Animals" is drafted long ago, however it cannot still be approved for 10 years.

In vitro methods that are already introduced in the Republican unitary enterprise «Scientific and Practical Center of Hygiene» replace assessment of irritant action of tools for care of skin. They are prime in use, not expensive, demanding small concentration of the tested substance, reducing research volumes, and the most important is efficient.

Requirements to check of toxicological safety of perfumery and cosmetic production are assumed by the complex analysis of substance (structure, degree of danger of each ingredient) then assessment method is chosen: either laboratory animals, or the alternate biological models. However, in our country there is no organization which would be engaged in their introduction and financing.

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## **WIND POWER IN BELARUS – CURRENT STATE AND PROBLEMS**

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Renewable energy sources (RES) are becoming very popular nowadays displacing fossil fuels. It goes without saying that consumption of conventional sources of energy can lead to serious environmental consequences such as air and water pollution, global warming (when we burn fossil fuels carbon dioxide releases), acid rains (because of sulfur dioxide), greenhouse effect, harmful impact on aquatic life by oil spill, etc. But it's also very necessary to single out that there are some economic issues that must be solved: for example, firstly, some countries has to import oil and natural gas from other countries where these resources are available in abundance, secondly, prices are really high, etc.

Nevertheless, the problems of the list are being addressed. Using the latest technologies and innovative approaches is vital; consequently energy is one of the priorities of science and technology development in most countries inside and outside the EU, including Belarus.

Belarus can't meet its needs for energy with domestic sources because its mineral resources are quite limited. The country has to import fuels and energy (about 80%), mainly from the Russian Federation. And one of the main aims of Belarus in energy sector is to increase the use of local energy resources especially renewable energy including energy of wind.

Wind power is the leading source of new power generating capacity in the world (3,7% of global electricity production) and playing a major role in meeting electricity demand in an increasing number of countries, including Denmark (42% of demand in 2015), Germany (more than 60% in four states) and Uruguay (15.5%). China added a staggering 30.8 GW of new capacity in 2015, for a total exceeding 145 GW – more wind capacity than the entire EU. While most countries have some small-scale turbines in use, the majority of units and capacity operating at the end of 2014 was in China (343.6 MW), the United States (226 MW) and the