

Implementation of sustainable development principles into regional assessment, technologies and productions.

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Results

Environmental sustainability assessment and environmental performance assessment of Ukrainian regions are carried out. The evaluation of environmental component of regional sustainable development on the basis of comparative analysis of the regions of Ukraine by complex indicator is carried out. The Black Sea and the Sea of Azov environmental vulnerability index is proposed and environmental vulnerability assessment of coastal Ukrainian regions is carried out. Problem-oriented model for product system impact assessment and calculation technique of a product damage index are proposed and approved. Sustainable resource consumption coefficient based on product system impact assessment including natural capital theory and monetarisation is proposed and approved. Water-efficiency indicator for industrial plant's water network evaluation is proposed.

Unification technique of quantitative estimates of impacts on environmental components is developed and the system of dimensionless indices is formed. Decision making method of assessment of designing object impact on components of the environment is proposed. Environmental risk structure based on environmental impact assessment concept and evaluation procedure of environmental risks for designing which allows determining environmental risk level quantitatively (and as a result assessing the environmental safety condition of the object under study) are developed.

Adsorption / desorption process of nitrogen oxides on synthetic zeolites is developed and implemented. Mathematical model which allows determining outlet nitrogen oxides' concentration in time and key technological parameter under optimal process conditions is developed.

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