

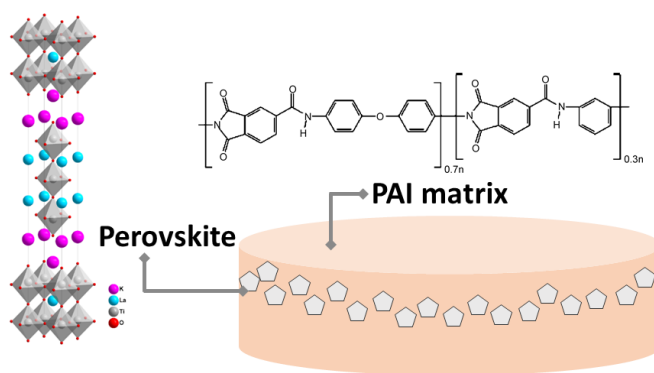
# Research of innovative membrane material modified with layered perovskites for the isolation of valuable products from aqueous and organic mixtures

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Polymer membranes have drawn considerable research attention in the field of membrane separation methods due to their high stability and low cost. Considering the advantages of polymer membranes, the inclusion of inorganic nanoparticles in a polymer matrix may be an interesting solution for the development of membranes with improved operational and transport properties.

The main aim was comprehensive research of membranes with the addition of perovskite-like layered oxides in polymer matrix. Particular attention was paid to the study structures of hybrid membranes by SEM and AFM methods, which revealed various compositions of the upper and lower surfaces of perovskite-containing membranes. The effect of inorganic modifiers on thermal properties, surface hydrophilicity and film density was evaluated.



*Fig. 1. Scheme of the composite membrane.*

Among the processes of membrane separation, pervaporation is an efficient way of separating liquid mixtures, especially in the case of close-boiling and azeotropic ones since it allows to reduce the need for energy and additional components. Transport behavior and separation properties were investigated in the pervaporation process of water/organic separation.

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