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Features of dry methane reforming on MoO_3, MoO_x-C and β-Mo_2C

© **Tatiana F. Sheshko**,[1]*+ **Yury M. Serov**,[1] **Anna N. Goryainova**, [1]
Tatiana A. Kryuchkova,[1] and **Natalia N. Gavrilova**[2]
[1] *Department of Physical and Colloidal Chemistry. Peoples Friendship University of Russia. Miklukho-Maklaya St., 6. Moscow, 117198. Russia. Phone: +7 (495) 955-07-66. E-mail: sheshko@bk.ru*
[2] *Department of Colloidal Chemistry. D.Mendeleyev University of Chemical Technology of Russia. Miusskaya Sq., 9. Moscow, 125047. Russia. Phone: +7 (499) 972-44-38. E-mail: ngavrilova@muctr.ru*

*Supervising author; +Corresponding author

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Abstract

The catalytic activity of systems based on molybdenum oxides and carbides in carbon dioxide reforming of methane were investigated, the research showing the prospects of this direction. It was found that the differences in the catalytic activity with the nature and structure of the particles, the maximum conversion of methane and carbon dioxide are observed when multi-faced β-Mo_2C-particles (with a hexagonal close-packed lattice) are used as a catalyst. The authors suggest that carbon dioxide conversion of methane on oxide and reduced catalysts take place by different routes: either through the formation of carbonate complexes or through the formation of particles CH_X and C.