

[7] Zhaksylykova G.Zh., Kalen A.M., Kajyrgaliev M.K., Humarhan A.Zh., Suerbaev H.A. Gidroalkoksikarbonilirovanie olefinov-1 v prisutstvii kataliticheskikh sistem na osnove fosfinovykh kompleksov palladiya // *Ezhemesyachnyj nauchnyj zhurnal*. 2015. № 2. P. 168-171.

[8] Suerbaev H.A., Chepajkin E.G., Dzhiembraev B.Zh., Appazov N.O., Abyzbekova G.M. Kataliticheskoe gidroalkoksikarbonilirovanie izobutilena monoksidom ugleroda i poliatomnymi spirtami v prisutstvii sistemy Pd(Acac)2-PPh3-TsOH // *Neftekhimiya*. 2007. Vol. 47, № 5. P. 376-378.

[9] Suerbaev H.A., Shalmagambetov K.M., Zhaksylykova G.Zh. Gidromentoksikarbonilirovanie izobutilena monoksidom ugleroda i l-mentolom. Lekarstvennoe sredstvo validol // *Himicheskaya tekhnologiya*. 2012. № 5. P. 297-300.

[10] Suerbaev Kh.A., Kudaibergenov N.Zh., Vavasori A. Hydroethoxycarbonylation of  $\alpha$ -Olefins at Low Pressure of Carbon(II) Oxide in the Presence of the PdCl<sub>2</sub>(PPh<sub>3</sub>)<sub>2</sub>-PPh<sub>3</sub>-AlCl<sub>3</sub> system // *Russian Journal of General Chemistry*. 2017. Vol. 87, № 4. P. 707-712.

[11] Suerbaev H.A., Turkbenov T.K., Zhaksylykova G.Zh. Kataliticheskoe karbonilirovanie  $\alpha$ -olefinov v prisutstvii metallokompleksov // *Doklady akademii nauk Respubliki Tadjikistan*. 2010. Vol. 53, № 7. P. 533-539.

[12] Saphan O.A., Stephen O.O. Methoxycarbonylation of olefins catalysed by homogeneous palladium(II) complexes of (phenoxy)imine ligands bearing alkoxy silane groups // *Inorganica Chimica Acta*. 2019. Vol. 489. P. 236-243.

[13] Zhaksylykova G.Zh., Appazov N.O., Kudajbergenov N.Zh., Asan N.E. Karbonilirovanie  $\alpha$ -olefinov monoksidom ugleroda i spirtami v prisutstvii fosfinovykh kompleksov palladiya // *Himicheskij Zhurnal Kazahstana*. 2019. № 2. P. 134-140.

[14] Yang J., Yuan Y. Promoting Effect of Lewis Acid on the Olefin Hydroesterification Catalyzed by Triphenylphosphine-Palladium Complex // *Catal. Lett.* 2009. Vol. 131. P. 643-648.

[15] Sevost'yanova N.T., Batashev S.A., Demerlij A.M., Aver'yanov V.A. Kinetika reakcii gidrokarbometoksilirovaniya oktena-1 pri katalize sistemoy Pd(OAc)<sub>2</sub>-PPh<sub>3</sub>-p-TsOH // *Uchenye zapiski: elektronnyj nauchnyj zhurnal Kurskogo gosudarstvennogo universiteta*. 2013. Vol. 2, № 3. P. 1-10.

[16] Suerbaev Kh.A., Kudaibergenov N.Zh., Kurmansitova A.K. Catalytic Hydroethoxycarbonylation of Octene-1 in the Presence of the System PdCl<sub>2</sub>(PPh<sub>3</sub>)<sub>2</sub>-PPh<sub>3</sub>-AlCl<sub>3</sub> // *Zhurnal Obshchei Khimii*. 2016. Vol. 86, № 9. P. 1562-1563.

[17] Gina M.R., Philip J.P., Keith L.K. Palladium Complexes with N-Heterocyclic Carbene Ligands As Catalysts for the Alkoxy carbonylation of Olefins // *Organometallics*. 2013. Vol. 32. P. 2033-2036.

[18] Bibhas R.S., Raghunath V.C. Carbonylation of alkynes, alkenes and alcohols using complex catalysts // *Catalysis Surveys from Asia*. 2005. Vol. 9, № 3. P. 193-205.

[19] Appazov N.O., Seitzhanov S.S., Zhunissoy A.T., Narmanova R.A. Synthesis of Cyclohexylisovalerate by Carbonylation of Isobutylene with Carbon Monoxide and Cyclohexanol in the Presence of Pd(PPh<sub>3</sub>)<sub>4</sub>-PPh<sub>3</sub>-TsOH and Its Antimicrobial Activity // *Russian Journal of Organic Chemistry*. 2017. Vol. 53, № 10. P. 1596-1597.

[20] Yespanova I.D., Zhusupova L.A., Tapalova A.S., Appazov N.O. Microwave activation of addition of 1-hexene and butanoic acid reaction // *News of the National Academy of Sciences of the Republic of Kazakhstan. Series Chemistry and Technology*. 2018. № 1(427). P. 63-69.

[21] Suerbaev Kh.A., Kudaibergenov N.Zh., Appazov N.O., Zhaksylykova G.Zh. Synthesis of l-menthylisovalerate by esterification of isovaleric acid with l-menthol under microwave irradiation // *Russian Journal of Organic Chemistry*. 2016. Vol. 52, № 4. P. 585-586.

[22] Suerbaev Kh.A., Chepaikin E.G., Zhaksylykova G.Zh. Hydromethoxycarbonylation of Isobutylene in the Presence of Tetrakis(triphenylphosphine)palladium-Based Catalyst Systems // *Petroleum Chemistry*. 2012. Vol. 52, № 6. P. 422-425.

[23] Aver'yanov V.A., Batashev S.A., Sevost'yanova N.T., Zarytovskij V.M. Vliyanie uslovij na skorost' i selektivnost' gidrokarbometoksilirovaniya oktena-1, kataliziruemogo fosfinovym kompleksom palladiya // *Kataliz v promyshlennosti*. 2005. № 2. P. 25-33.

[24] Knifton J.F. Linear Carboxylic Acid Esters from  $\alpha$ -Olefins. Catalysis by Homogeneous Palladium Complexes // *Journal Organic Chemistry*. 1976. Vol. 41, № 17. P. 2885-2890.