

Method for obtaining a catalyst for photochemical oxidation of carbon monoxide includes using tricobalt tetroxide as the catalyst base, synthesized by dissolving cobalt nitrate hexahydrate in a mixture of ethylene glycol and polyethylene glycol, homogenizing the resulting solution, stirring it, and drying it to a dry gel at 100 °C for 60 hours, grinding the dry gel, tritulating it, calcining the ground gel at a temperature of 700 °C for 2 hours, cooling the heat-treated gel, and further processing it in a ball mill. Tricobalt tetroxide/bismuth oxobromide heterostructure, with the mass ratio of tricobalt tetroxide to bismuth oxobromide is 1 to 0.03, is used as a catalyst. Bismuth oxobromide, as a component of a heterostructure, is obtained by dissolving bismuth nitrate pentahydrate in a mixture of ethylene glycol and polyethylene glycol, adding an aqueous solution of potassium bromide to the resulting solution, stirring the mixture of solutions until a precipitate is formed, thermally treating the resulting precipitate without separating the solvents for 60 minutes using a reflux condenser, separating the precipitate by filtration, washing it with water, and drying it at 80 °C until a dry, free-flowing, nanoscale bismuth oxobromide powder is obtained. Tricobalt tetroxide/bismuth oxobromide heterostructure is formed by mixing free-flowing fractions of its components in the specified ratio, suspending the mixture of the heterostructure components in isopropyl alcohol, ultrasonically homogenizing the resulting suspension, applying the homogenized suspension to a substrate, and drying it at room temperature on the substrate until the liquid phase is removed.