Due to the rapid development of industry, as well as the need to apply new technologies increasingly using platinum group elements, in the last few years much more attention is paid to research on this group of elements. They have a harmful effect on humans, animals and plants, so their emission into the environment should be monitored. In the early years of the twentieth century the presence of palladium (and other platinum group elements) in the soil was impossible to quantify because of their low content. The use of platinum group elements (including palladium) as a catalyst for many chemical reactions, although significantly contributed to the reduction of emissions to the atmosphere (e.g. carbon, sulfur or nitrogen oxides), is also a cause of their presence in the environment. As a result of surface abrasion of catalytic converters, the concentration of platinum group elements constantly increases in road dust, soil, plants, and also in waters near highways. Many studies are conducted on the presence and bioaccumulation of these metals in the environment. Due to their harmfulness it is necessary to monitor their content in different elements of the ecosystem. Determination of platinum, rhodium, and particularly palladium in environmental samples is a very difficult task, because of their extremely low content, and high impact of other components of the sample on the measurement results. Platinum group elements are present in the environment at trace levels, so only analytical methods of high sensitivity can be applied for the measurements. There are few laboratories capable of carrying determinations at ultratrace levels. The method dedicated for determination of palladium is atomic absorption spectrometry with atomization in graphite furnace (GF AAS), but this method requires a preconcentration step prior to the analysis, and this may be a source of errors. The method most commonly used in routine analysis of traces of various metals is mass spectrometry with ionization in argon plasma (ICP MS), but in the case of palladium at such a low concentration level as encountered in natural samples, there is a big problem with interferences caused by other elements present in the sample. Such disturbances cause errors and the results might be even several times overstated. An alternative method of determination of platinum group elements is one of electrochemical methods – stripping voltammetry (SV). This technique enables measurements at very low concentration levels, but it is based on complex chemical processes that occur in the solution and on the surface of the electrodes. To date, the appropriate procedures which allow measurements over the range of concentrations found in the environment have been developed only for platinum and rhodium. Palladium can also be determined electrochemically, but not at trace levels. The aim of the project is to develop an electrochemical method of palladium determination, allowing measurements at concentrations as low as for platinum and rhodium. To achieve this goal it will be necessary to test a number of chemicals and select those which react with palladium in a desired way. The next step will be choosing the optimal parameters for measurements. Final procedure will be used to determine palladium in various environmental samples. Disposing of such a method will allow us to “see” what had been beyond our reach.