

“– If you want a friend, tame me...
– What must I do, to tame you? asked the little prince.
– You must be very patient. First you will sit down at a little
distance from me-- like that-- in the grass. I shall look at you out of the corner
of my eye, and you will say nothing. Words are the source of
misunderstandings. But you will sit a little closer to me, every day...”
„The Little Prince” Antoine de Saint-Exupéry

Each reaction including also the one related to the element oxidation state transition (redox reaction) needs the appropriate driving force to occur. This situation can be compared to the growth of flower, which theoretically could be sown anywhere. Nevertheless, only their proper care contributes to the growth of the stem and blossoming of buds. Oxygen is a very important factor that supports the proper growth of plants in this process. A similar role is played by oxygen in the redox reaction occurring on the electrode surface. Therefore, the aim of the proposed project is based on controlled growth of oxygen groups on the carbon electrode surface. The impact of their presence will be investigated in an acidic medium with vanadium species on the different oxidation state. This will allow to determine the mechanism of vanadium reaction and find potential reasons for its irreversibility during subsequent work cycles. Similarly, as in excerpt of the book entitled “The Little Prince”, which is quoted above, obtained scientific research will gradually make "friendship" between the carbon electrode and vanadium redox pairs. Small and effective research steps can achieve the intended goal, and thus the improved rate and reversibility of the reaction, which needs appropriate conditions to be proceeded.