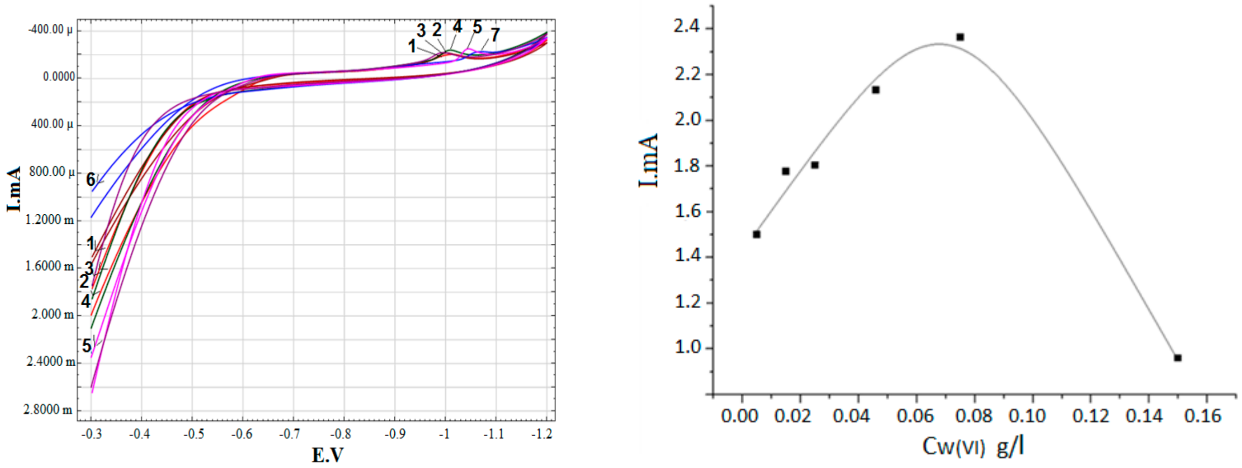

(**a**) (**b**)

Figure 3. Volt–ampere curves of an iron electrode (**a**) and a change in the ionization current of the iron electrode (**b**) at different concentrations of W(VI). Electrolyte 0.3M Na_2SO_4 + 0.2 g/L Zr (VI) + W (VI) (g/L): 1—0.005; 2—0.015; 3—0.025; 4—0.05; 5—1.5.

According to Figure 3a at low concentrations of W (VI) from 0.005 to 0.05 g/L, the value of the maximum current (A) in the cathode part of the volt-ampere curves practically did not change. At a concentration of W (VI) > 0.05 g/L, a shift of the cathode maximum towards the negative region and a decrease in its current were observed. In the anodic region, with an increase in the W (VI) concentration from 0.005 to 0.075 g/L, a shift of the ionization potential to the cathode region was observed. However, at a higher concentration of 0.15 g/L, a sharp shift in the ionization potential to the anode region was seen. According to Figure 3b, an increase in the W (VI) concentration from 0.005 to 0.075 g/L in the electrolyte of 0.3 M Na_2SO_4 + 0.2 g/L Zr (IV) led to an increase in the ionization current of the iron electrode from 1.5 to 2.3 mA. A further increase in the W (VI) concentration promoted a sharp decrease in the ionization current and an increase in the corrosion resistance of the iron electrode. Thus, at a W (VI) concentration of 0.15 g/L, the ionization current of the iron electrode was 0.9 mA.

The combined effect of W (VI) + Mo (VI) ions on the corrosion resistance of an iron electrode was considered. Figure 4 shows the electrochemical behavior of an iron electrode in an electrolyte containing, in addition to zirconium ions, tungsten and various concentrations of Mo (VI) molybdenum ions.