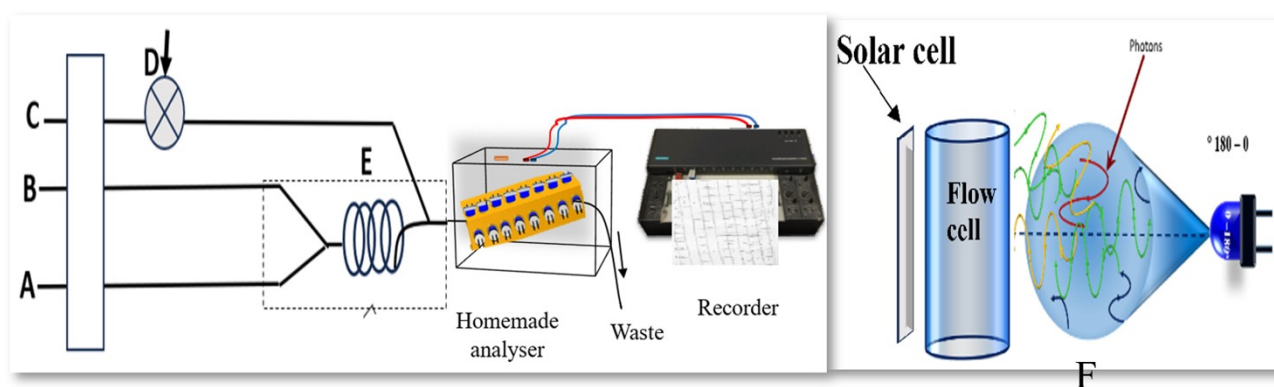
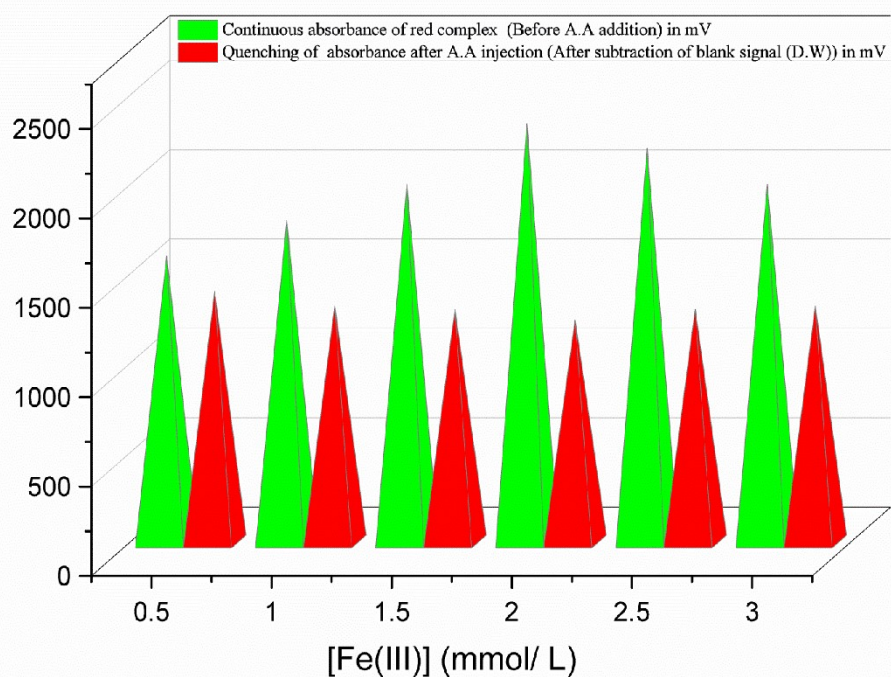


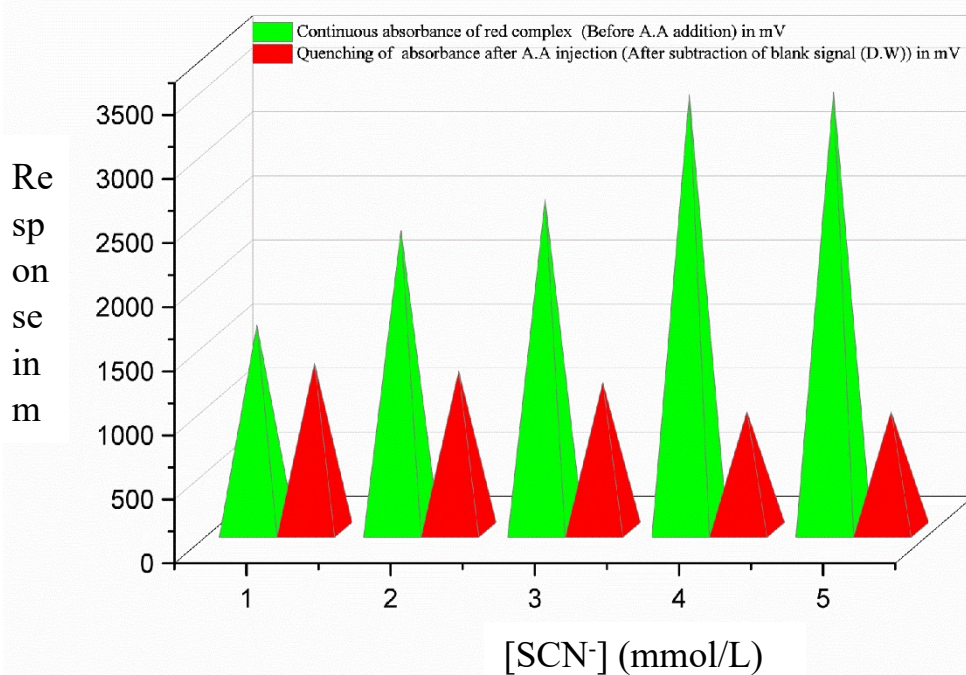
**Figure 1: Illustrating the main components of the spectroscopic instrument along with the measurement configuration: A- measurement cell, B- Illuminated area by: a) Source at 0–90°, b) Source at 0–180°, C: real profile measured responses obtained from the chart recorder (T : Tim in minute, d: distance in ml meter).**



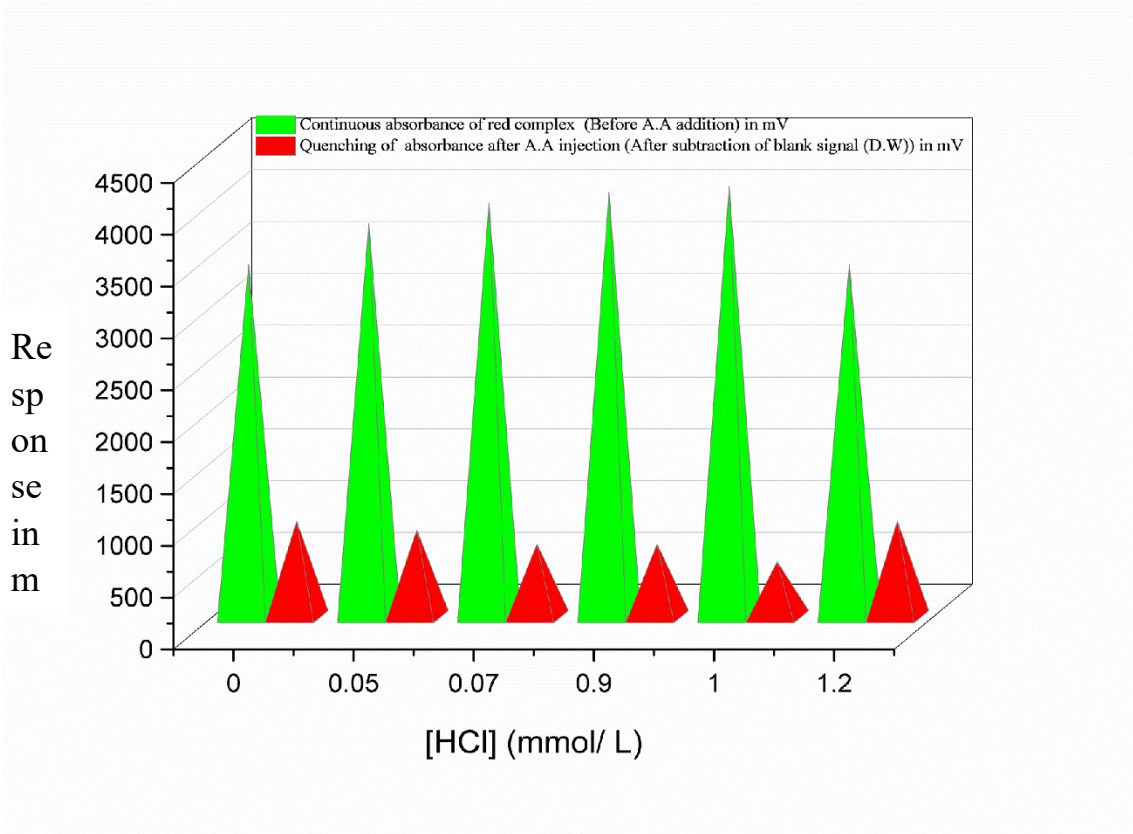
**Figure 2: Diagram of the continuous flow injection system. A: Line moving ferric ion in hydrochloric acid medium; B: Line carrying thiocyanate ion; C: Carrier stream containing ascorbic acid; D: Injection valve for sample introduction; E: The unit mixes reagents to create the red FeSCN<sup>2+</sup> complex. This stage is followed by a reaction coil for complex development, which intersects line C to quench the complex with ascorbic acid prior to photometric detection. F: The LED-blue irradiation source is shown with the single solar cell detector, which is positioned at a measuring angle of 0° to 180°.**



**Figure 3: Effect of Ferric Ion Concentration on absorbance of Complex Formation , Quenching Sensitivity by Ascorbic Acid, Residual Absorbance and the optimal concentration of ferric ion = 2.0 mmol/L**

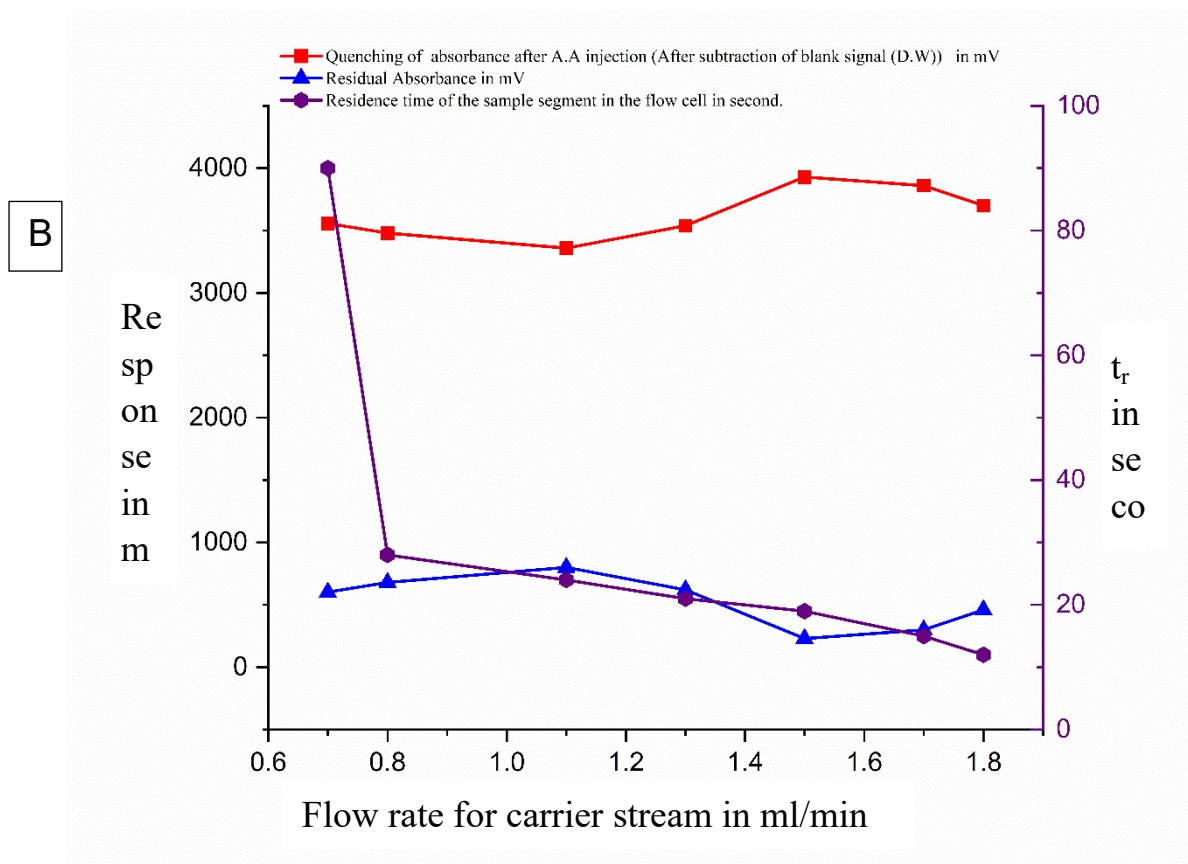
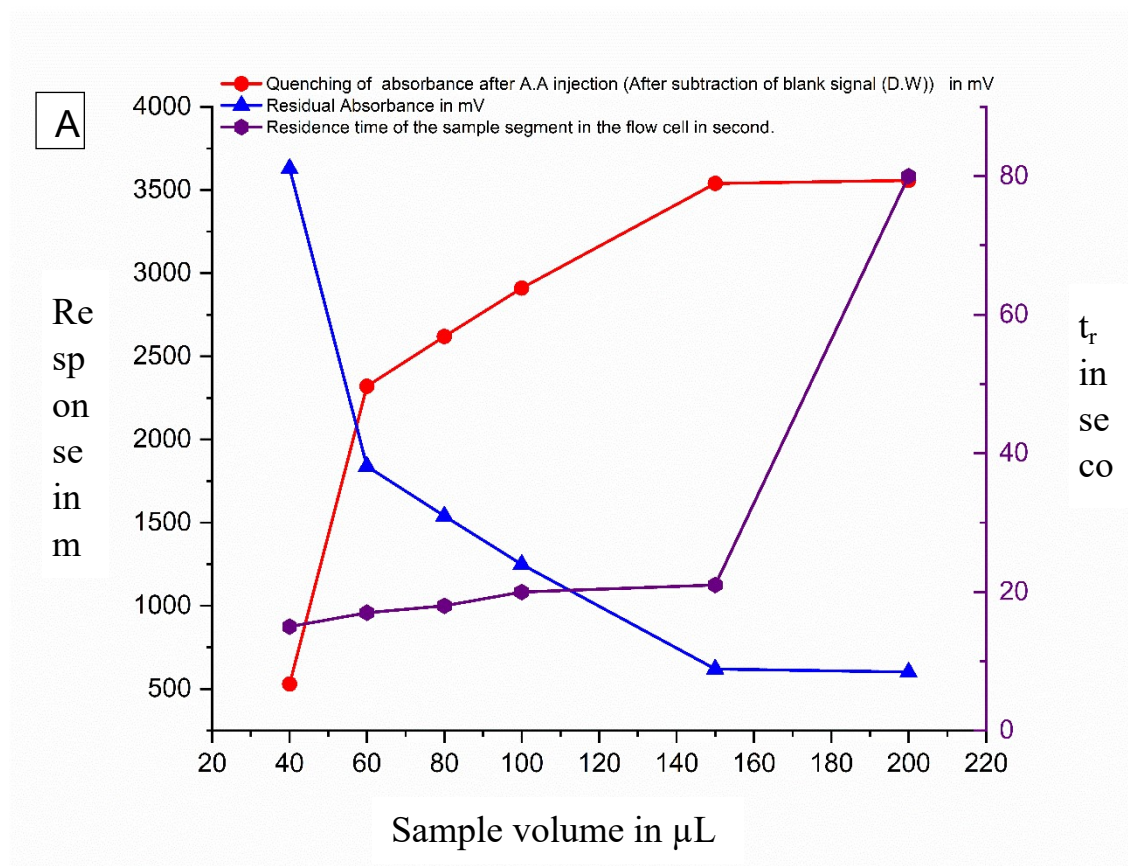


**Figure 4: Effect of Thiocyanate Ion Concentration using  $\text{Fe}^{+3}$  (2 mmol/L)-SCN- (variable concentration )- $\text{H}_2\text{O}$  system and  $[\text{A.A}] = 38 \text{ mmol/L}$  on absorbance of Complex Formation, Quenching by Ascorbic Acid , Residual Absorbance and the optimal concentration of  $\text{SCN}^- = 4.0 \text{ mmol/L}$**

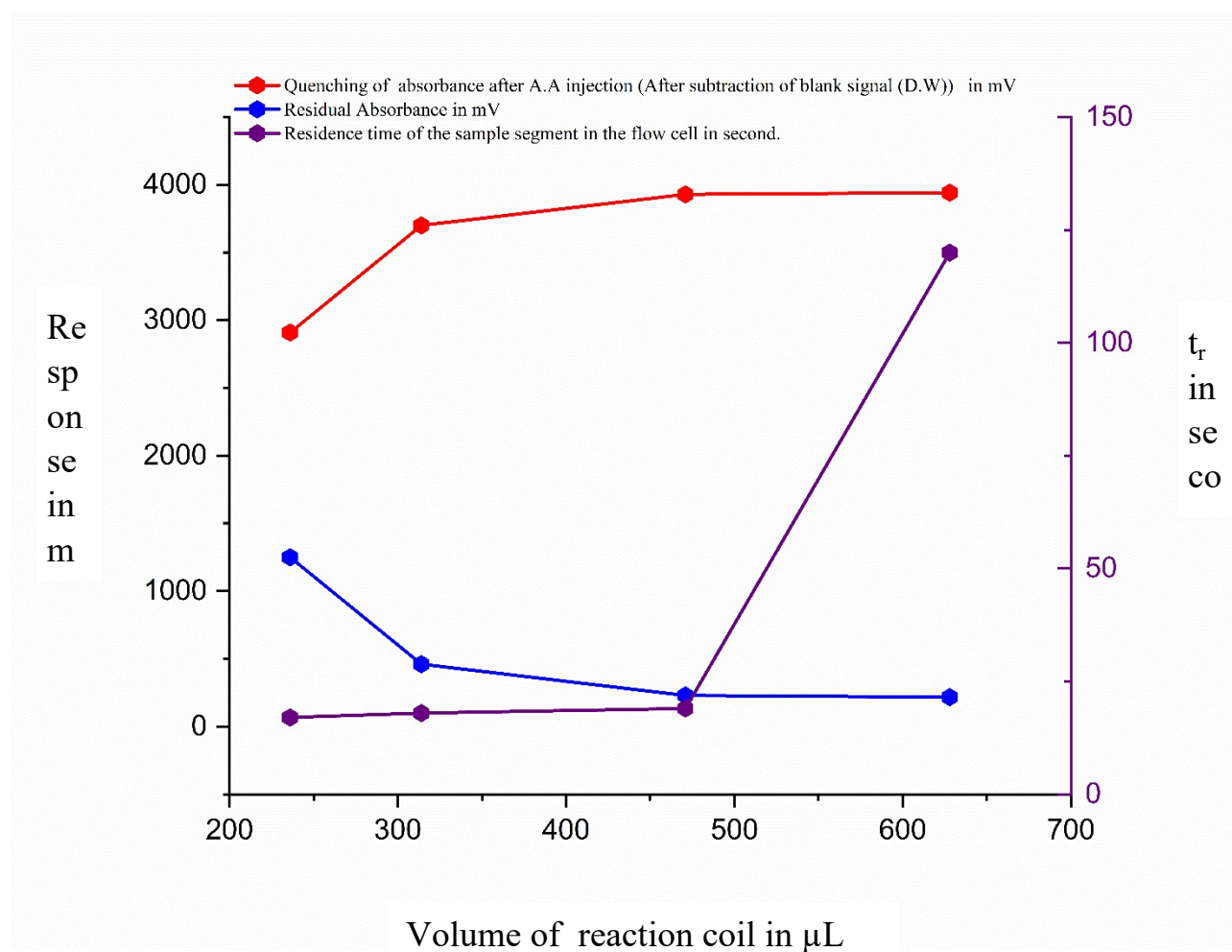


**Figure 5: Effect of Hydrochloric Acid Concentration on absorbance of Complex Formation and the Residual Absorbance, optimal concentration of  $\text{HCl} = 1.0 \text{ mmol/L}$**

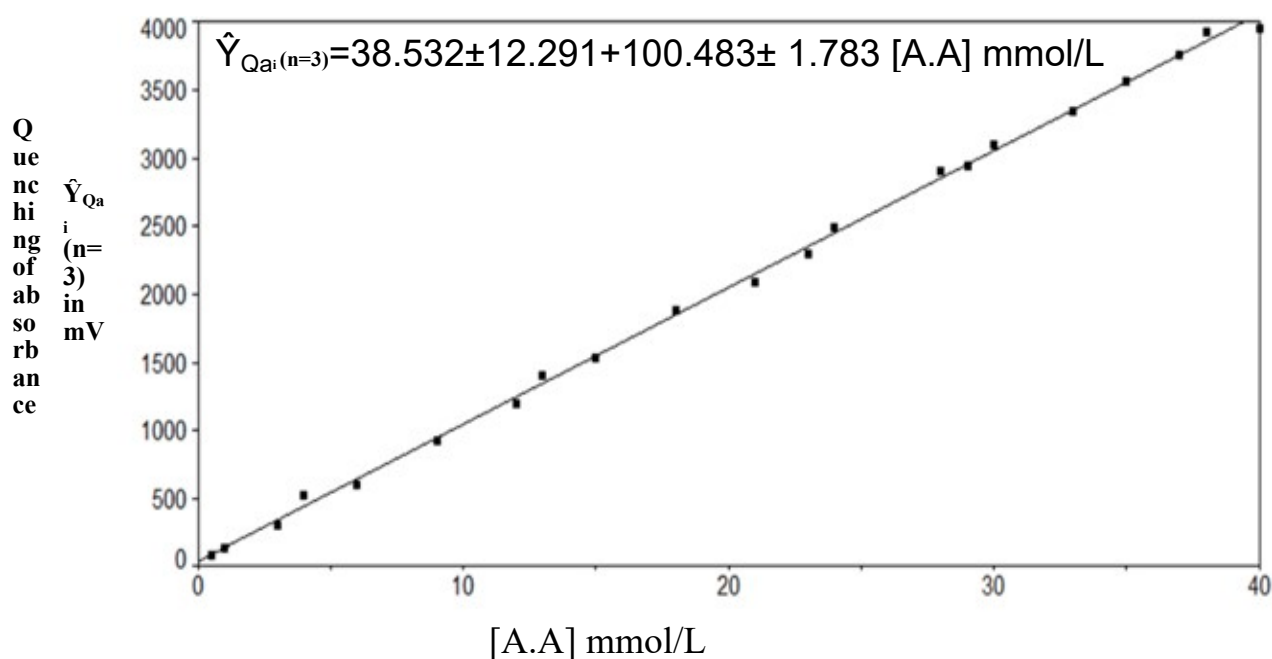




**Figure 6: Effect of A- Sample Volume and B- Flow Rate on the Quenching Efficiency of the Red  $\text{FeSCN}^{2+}$  Complex by Ascorbic Acid using  $\text{Fe}^{+3}$  (2 mmol/L) -  $\text{SCN}^-$  (4 mmol/L) -  $\text{H}_3\text{O}^+$  (1 mmol/L) system in the Presence of  $[\text{A.A}] = 38 \text{ mmol/L}$**



**Figure 7: B- Effect of Volume of reaction coil on the absorbance of Complex Formation, Quenching by Ascorbic Acid , Residual Absorbance and the optimum volume was determined to be 471  $\mu\text{L}$**



**Figure 8 :The effect of varying ascorbic acid concentration on enhancing the quenching of the red complex's absorbance, as visualized through a calibration curve constructed.**