

## List of Tables

| Table No. | Title   | Page No. |
|-----------|---|----------|
| Table 2.1 | List of chemicals   | 39       |
| Table 3.1 | Comparison of proposed method with earlier reported literature toward the detection of $\text{Co}^{2+}$ .         | 79       |
| Table 3.2 | Standard recovery test of spiked $\text{Co}^{2+}$ in vitamin B-12 sample measured with N-CQDs.                    | 84       |
| Table 4.1 | Di exponential lifetime fitting data of N,S-CQDs and N,S-CQD-MnO <sub>2</sub> nanohybrid.                         | 103      |
| Table 4.2 | Comparative study of synthesized N,S-CQD-MnO <sub>2</sub> composite based nanoprobe with earlier reported method. | 107      |
| Table 4.3 | GSH detection in a human blood serum and RSD for the three independent measurements.                              | 109      |
| Table 5.1 | Quantum yield of CQDs with respect to quinine sulfate.  | 120      |
| Table 5.2 | Sensing performance of different fluorescent nanoprobe towards the $\text{Hg}^{2+}$ detection.                    | 126      |
| Table 5.3 | Detection of $\text{Hg}^{2+}$ in natural water sample and RSD for n = 3.  | 129      |
| Table 6.1 | Comparison of the obtained kinetic parameters $K_m$ and $V_{max}$ with other nanomaterial and HRP.                | 150      |
| Table 6.2 | Sensing performance of different nano-probe for the detection of GSH.   | 156      |
| Table 6.3 | Detection of GSH in a human blood serum and RSD for the three replicate measurements.                             | 157      |