We have demonstrated a one-step microwave assisted method for synthesizing carbon nanodots (C-dots) from JEFFAMINE® T3000 and T5000 which is a simple, rapid and green synthetic route for the production of water-soluble C-dots with highly intense photoluminescence without post surface passivation process. The as-prepared C-dots can be applied as a useful fluorescence sensor based on their remarkably selectivity and sensitivity of Fe (III) ions over other interfere metal ions in water. In this metal ions quenching study, the observed perfect linear relationship between the relative fluorescence intensity respond to the addition of Fe (III) ions suggests their potential to be applied in a real sample in the near future.