Modified glassy carbon electrodes based on carbon nanostructures for ultrasensitive electrochemical determination of furazolidone Saeed Shahrokhian a,b, ,, Leila Naderi a, Masoumeh Ghalkhani c,d a Department of Chemistry, Sharif University of Technology, Tehran 11100-1017, Iran b Institute for Nanoscience and Nanotechnology, Sharif University of Technology, Tehran, Iran c Department of Chemistry, Faculty of Science, Shahid Rajaee Teacher Training University, Lavizan, Tehran, Iran d Institute for advanced technologies, Shahid Rajaee Teacher Training University, Lavizan, Tehran, 17VAA, Iran a r t i c l e i n f o a b s t r a c t Article history: Received 11 November ۲・10 Received 11 November ۲・10 Accepted 11 January ۲・13 Available online 17 January ۲・13

The electrochemical behavior of Furazolidone (Fu) was investigated on the surface of the glassy carbon electrode modified with different carbon nanomaterials, including carbon nanotubes (CNTs), carbon nanoparticles (CNPs), nanodiamond-graphite (NDG), graphene oxide (GO), reduced graphene oxide (RGO) and RGO-CNT hybrids (various ratios) using linear sweep voltammetry (LSV). The results of voltammetric studies exhibited a considerable increase in the cathodic peak current of Fu at the RGO modified GCE, compared to other modified electrodes and also bare GCE. The surfacemorphology and nature of the RGO film was thoroughly characterized by scanning electron microscopy (SEM), atomic force microscopy (AFM), electrochemical impedance spectroscopy (EIS) and cyclic voltammetry (CV) techniques. The modified electrode showed two linear dynamic ranges of $\cdot, \cdot, \cdot - \cdot, \cdot$ μ M and $\cdot, \cdot - \cdot, \cdot$ μ Mwith a detection limit of \cdot, π nM for the voltammetric determination of Fu. This sensor was used successfully for Fu determination in pharmaceutical and clinical preparations.