QUENCHING EFFECT OF SOME CATIONS AND AMINO ACIDS ON PEROXYOXALATE CHEMILUMINESCENCE OF IMINO BENZENE DERIVATIVE

Maryam BORDBAR1, Ali YEGANEH FAAL2, Hamid EMAMI3, Maryam KOLIVAND2, Bahare JAMALIAN2, Masoud SALAVATI-NIASARI4

1) Department of Chemistry, Islamic Azad University, Qom-Branch, Qom, Iran
2) Department of Chemistry, Payam noor University, Hamadan, Iran
3) Department of biology, Faculty of Science, Isfahan University, Isfahan, Iran
4) Department of Chemistry, Faculty of Sciences, Kashan University, Kashan, Iran

*Corresponding author: Tel. & fax: +98-251-2916449. E-mail: m.bordbare@gmail.com

Key Words: Peroxyoxalate Chemiluminescence, Quenching, Imino Benzene

Peroxyoxalate chemiluminescence (PO-CL) is a well known and powerful means of detecting hydrogen peroxide [1] and a variety of fluorophores [2]. Thus, the kinetics and mechanism of PO-CL have been extensively investigated [3]. It has been shown that the quenched chemiluminescence of peroxyoxalate systems has a potential for the detection of any compounds such as anilines, organosulfur compounds and certain inorganic anions such as nitrite, sulfite, iodide and bromide and cations [4].

In this work the chemiluminescence arising from the reaction of bis(2,4,6-trichlorophenyl)oxalate (TCPO) with hydrogen peroxide in the presence of 2,11,17,26-tetramethyl-3,10,18,25-etazaazapentacyclo [25.3.1.12,16.04,19,24] dotriaconta-l(31),2,4(9),5,7,10,12(32),13,15,17,19,21,23,25,27,29-hexadecaene-13,15,28,30-tetrao and 3,9,17,23-tetramethyl-2,10,16,24,29,31-exaazaazapentacyclo [23.3.1.14,11,15,18,22] dotriaconta-l(29),2,4,8(32),9,11,13,15(31),16,18(30),19,21,23,25,27-hexadecaene-5,7,19,21-tetraol have been studied. Quenching effect of amino acids and Co2+, Cu2+, Zn2+, Al3+, Cd2+ and Hg2+ on chemiluminescence was investigated. The chemiluminescence parameters were evaluated from computer fitting of the resulting intensity-time plots.

References: