

## Determination of Low-level Nitrate in the Upper Water Column Using a Chemiluminescent Method

Dong-Shan Chiang<sup>1</sup>, Gwo-Ching Gong<sup>2</sup>, Kon-Kee Liu<sup>1,3</sup>

(received 1996/10/15, revised 1996/12/12, accepted 1996/12/15)

### ABSTRACT

In order to determine nitrate concentrations (including nitrite) in the euphotic zone of the West Philippine Sea, a chemiluminescent technique was employed on Cruise 457 of the Ocean Researcher I. A good linear correlation between the peak height of the chemiluminescent signal and nitrate concentrations was found in the concentration range of 40 to 1000 nM. The detection limit was estimated to be 3 nM. The precision for this method was  $\pm 10\%$  when the nitrate concentrations were about 60nM. The nitrate concentrations observed in the top 50m of the West Philippine Sea surface water were within 10 nM. The nitrate concentration, however, increased exponentially at depths below 50 m, reaching concentrations around 1000 nM at 200 m.

**Keywords:** chemiluminescence, nitrate, West Philippine Sea, surface layer

智慧藏

---

<sup>1</sup> Institute of Oceanography, National Taiwan University, Taipei, Taiwan, R.O.C.

<sup>2</sup> Department of Oceanography, National Taiwan Ocean University, Keelung, Taiwan, R.O.C.

<sup>3</sup> Global Change Research Center, National Taiwan University, Taipei, Taiwan, R.O.C.