

## Study of dissolved copper (II) speciation at coastal water of Peninsular Malaysia

### ABSTRACT

Samples from Perhentian and Pangkor Island Marine Park, Peninsular Malaysia were analyzed for Cu(II) speciation by using CLE-AdCSV. Northeast monsoon effect was studied in Perhentian and compared with Pangkor. Excess concentration of CuL found for all stations in both islands showed >99.5% of total dissolved Cu (dCu) was bound to Cu (II) complexing ligands. The  $\log K'_{CuL} > 12$  data indicated the presence of strong natural ligands (L1) in Perhentian Island. Lower  $\log K'$  ( $\log K' = 10$  to  $12$ ) and two types of ligands (L1 and L2) were found in Pangkor Island. The ratio of CuL/dCu was analysed to see the ligand distributions, and saturation rate with dissolved Cu. Statistical analysis showed weak relationship between the in-situ parameters to  $\log K'$  values ( $p > 0.05$ ). The  $\log K'_{CuL}$  (PP: 12.00-12.96, PG: 10.93-12.840) data suggested that the dissolved Cu are used by marine organisms, thus preventing the free Cu<sup>2+</sup> ions to be produced.

**Keyword:** Cu speciation; Cu toxicity; Northeast monsoon; CLE-AdCSV; South China Sea