



## **Preliminary design of automatically antioxidant capacity analyzer based on ABTS assay**

Napaporn Youngvises<sup>1\*</sup>, Kittirat Kitticharoenwiwat<sup>1</sup>, Puthiporn Nakmanee<sup>1</sup>,  
Amonrat Wongsrikeaw<sup>1</sup> and Hau Van Nguyen<sup>1</sup>

<sup>1</sup> *Innovative Green Chemistry Research Unit, Department of Chemistry, Faculty of Science and Technology, Thammasat University, Pathum Thani, 12120, Thailand*

\*e-mail: [nyoungvises@hotmail.com](mailto:nyoungvises@hotmail.com)

The system of antioxidant activity evaluation was designed and the IC<sub>50</sub> value was presented automatically after measuring the solution series in ABTS assay. The system consisted of 735 nm LED as a light source and photodiode as a detector. In the measurement system, three concentrations of antioxidant were measured, from low to high concentration and IC<sub>50</sub> was displayed within 5 sec. Trolox and ascorbic acid solutions were chosen to test the proposed system in the concentration range of 4.90-24.70 micromolar and the IC<sub>50</sub> values were 12.23±0.07 (n=3) and 12.32±0.09 (n=3) micromolar, respectively. The proposed equipment was utilized to measure IC<sub>50</sub> of 9 herbal samples comparing to commercial spectrophotometer, with % RSD of 2.3 whereas the latter was 2.0. The good correlation between the results of two equipments was presented. The main advantage of IC<sub>50</sub> reader is compact, user-friendly, convenient and fast.

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