APPENDIX

A.1 Calculation of Concentration of Copper, Cadmium, Nickel, and Lead

The strength of copper, cadmium, nickel and lead were determined by using absorbance of AAS. The strength was evaluated from a standard plot as shown in Figure (A.1-A.4). The standard solution of copper, cadmium, nickel and lead were prepared from the stock solution of 1000 ppm by dilution. Absorbance of heavy metals solutions were plotted as shown below.

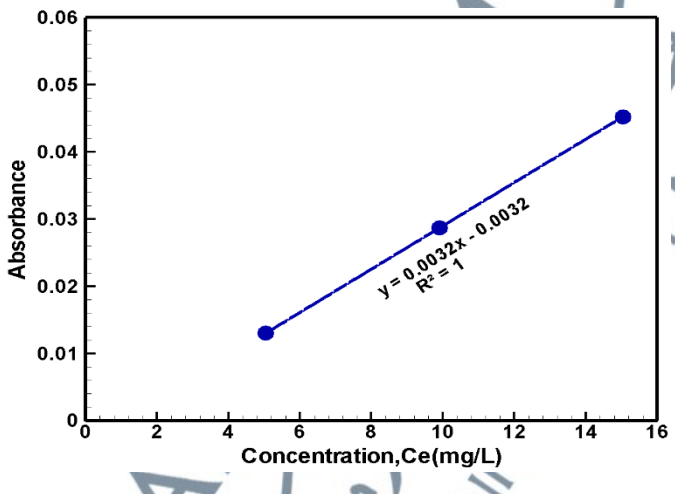

Figure A.1 Standard plot of copper

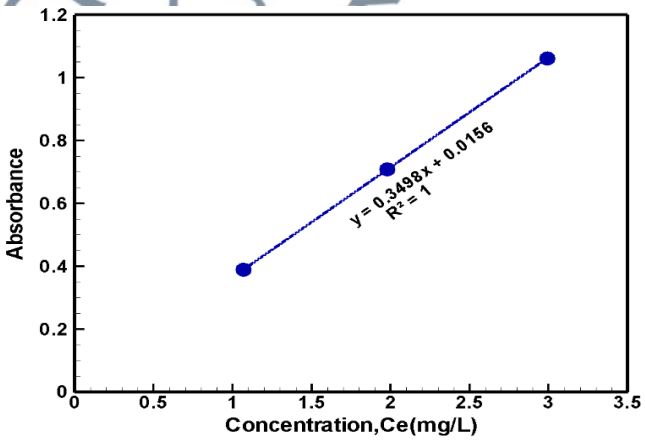

Figure A.2 Standard plot of cadmium

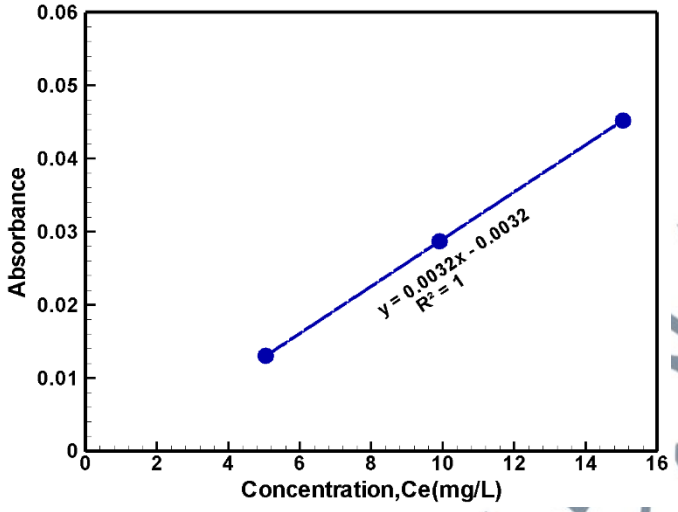

Figure A.3 Standard plot of nickel

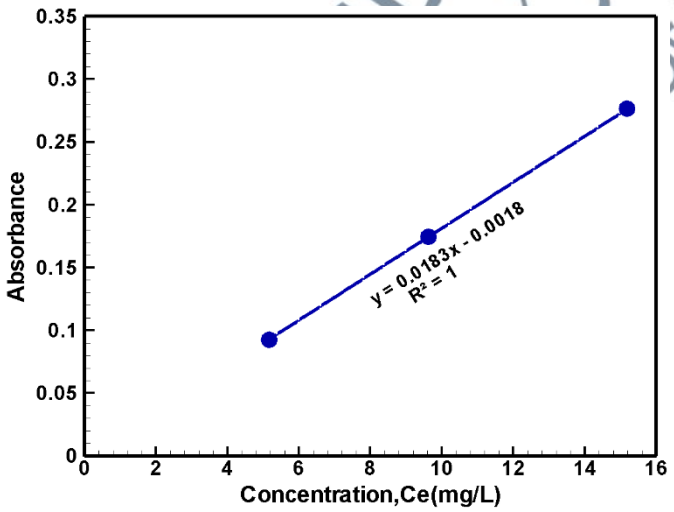

Figure A.4 Standard plot of Lead

B.1 Estimation of Concentration of Methylene Blue

The concentration of methylene blue was determined by using absorbance of UV. The strength was evaluated from a standard plot as shown in Figure (B.1). The standard solution of methylene blue was prepared from the stock solution of 1000 ppm by dilution. Absorbance of dye solution was plotted as shown in below.

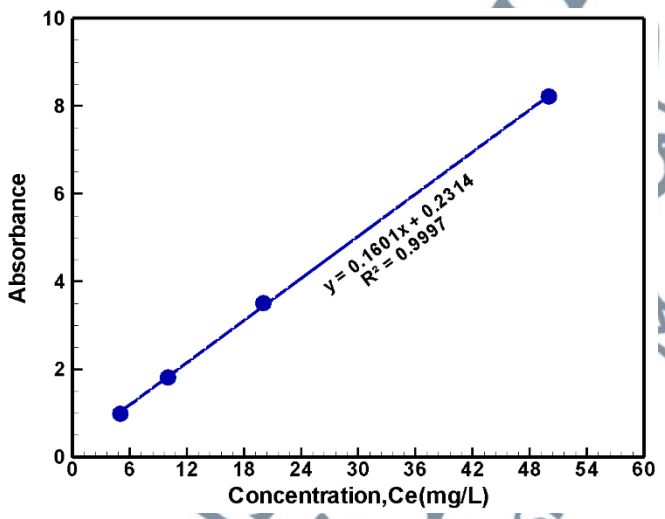

Figure B.1 Standard plot for methylene blue

LIST OF PUBLICATIONS

1. Azad M. S., Hassan M. S., Shahinuzzaman M. & Azhari S. "Removal of Copper from spiked aqueous solution Using Activated Carbon of Rice Husk", *Science and Technology Asia*, ISSN: 2586-9000, 2021, (Accepted).

2. **Azad M. S**., Hassan M. S., Shahinuzzaman M. & Azhari S., (2020). Removal of Methylene blue, *Escherichia coli* and *Pseudomonus aeruginosa* by Adsorption Process of Activated Carbon Produced from *Moringa oleifera* Bark", *Malaysian Journal of Science, Health & Technology*, vol. 7, page: 29-39.

3. **Azad M. S**., Hassan M. S., (2020). Importance of *Moringa Oleifera* for Wastewater Treatment: A Review*" International Journal of Sustainable Energy Development (IJSED)*, Volume 8, page: 415-420.