Extended Abstract

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The international debate on Screening of plant extracts for green synthesis of Ag Nanoparticles

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One of the most famous areas is nanotechnology because its application is available for several researches. Especially, metal nanoparticles (MNPs) can be developed for biofuel cells, ion batteries, medical field, and sensing device. The MNPs are nanosized metals (1-100nm) that have optoelectronic and biochemical characteristics. Silver nanoparticles (AgNPs) are one of the most attractive materials because of various applications including pharmaceutics, textile industries, and agriculture. Green synthesis is integrated in production of AgNPs to sustain and save for environments. Therefore, the plant extracts for AgNPs synthesis are promising methods and low cost. In this work, we have tried to synthesize AgNPs by Thai local plant extract to apply for detection of heavy metal. Roselle, butterfly pea, and turmeric have been chosen to test the characteristics of AgNPs.

For preparation of plant extracts, 10grams of all plants are dried and boiled with 100mL deionized water and absolute ethanol for 30min. All boiled plant extracts were cooled down and filtered with filter paper. For preparation of AgNPs, 2 mL of plant extracts were added to 10mL of 1mM AgNO3 solution. The reaction (reduction of Ag+ ions to Ag0) was tested at 1, 2, 3, 4, and 24 hours by UV-Vis absorption spectra. In addition, Transmission electron microscopy (TEM) was used to compare the images of the AgNPs obtained after 24 hours of reaction.

Note : This work is partly presented at Global Summit on Advanced Plant Science and Natural Resources on October 05-06, 2020 in Amsterdam, Netherlands