

# Deplaqtor, UV-Based Dental Plaque Detector by UGM Students

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Having clean white teeth is everyone's dream. However, the appearance of dental plaque can be disturbing and it also causes tooth decay and gum disease.

Dental plaque is the main agent that causes dental caries and periodontal disease. It is formed by leftover food particles that coat the teeth and harden into tartar.

Therefore, plaque control is essential for everyone. It is, however, still ineffective and inefficient because plaque control using a disclosing solution leaves stain or redness on the teeth and gingiva that causes patient's discomfort.

"Excessive use of erythrosine in disclosing solution can also cause side effects, such as breathing difficulties, chest tightness, headache, and skin irritation when used in high doses," said Angelia Rosalina Anwar, UGM Dentistry student on Thursday (7/12) in the campus.

Addressing the issue, Angelia along with Bintang Wijaya (Faculty of Engineering), Fariza Putri Aulia



(Faculty of Pharmacy) joining in the 2018 UGM PKM-KC Team have attempted to find the solution. The three students then designed a UV-based device that can detect dental plaque.

Under the guidance of drg. Hendri Susanto, M.Kes., Ph.D., they developed a device with a fairly-simple operating procedure. The device is named as Deplaqtor.

The first step to use Deplaqtor is by inserting it in the mouth and pressing the start button. After that, Ultraviolet rays will immediately detect plaque and display the reading results on the LCD screen.

Bintang added that the device is equipped with a smartphone application, Deplaqtor. The app is used to show the patient's dental history.

Another advantage of the device is that it uses flavonoid and oxazine compounds. By using the two compounds, Deplaqtor does not stain the teeth and gingiva after a plaque detection.

Plaque disclosing agent, Bintang said, is useful in the calculation of plaque index by operators. In addition, it also serves as an educational tool to instruct and motivate people to keep oral hygiene.

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