ABSTRACK

Light Curing is a dental instrument that produces visible light with a wavelength of 400-500 nm. Light Curing itself is used to harden dental fillings. The fillings on the teeth were carried out because of the damage to the tooth structure (caries). One of the dental fillings to replace the missing tooth structure used today is composite resin. This tool will illuminate the composite resin with a predetermined time, the author uses Arduino NANO as a timer on the tool. The illumination process in this tool is equipped with 3 Irradiation Modes (Stepped, Ramped, and Pulse-Delayed) and also setting the light intensity for conventional modes. Based on the results of testing and retrieval of data by measuring the hardness of composite resin with the Hardness Tester tool, composite resin is given irradiation with a time of 20 seconds, 40 seconds and 60 seconds with a composite resin thickness of 2mm. In a tool with an additional 3 modes and an additional selection of irradiation intensity with a time of 20 seconds can not meet, but at irradiation with a time of 40, and 60 seconds can meet the level of human chewing power that is able to withstand as much as 47 Ba. At the results of 20 seconds irradiation can not meet, this can be influenced by several factors including the specifications of the LED used are different, environmental conditions when giving irradiation on composite resin, lack of accuracy when preparing samples that are less flat sample surface, and reading accuracy during testing.

Kata Kunci : Light Cure, Stepped, Ramped, and Pulse-Delayed, Caries, Composite Resin, LED