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**Evaluation of Mechanical Properties for Selected
Dental Composite Resin Polymerized by Light Curing
Technology at Different Thickness**

Abstract. The objectives of this study were to estimate the effect of the blue light cure unit on the compression force and hardness for composite resin Nano Ceram at the different thicknesses. The basic material used in this study was Ivoclar Vivadent Tetric N- Ceram Light Cured Hybrid restorative composite resin. The samples were cured by applying a (LED.F) unit Blue phase in a wavelength emission spectrum (494 NM) was used. 60 disc-shaped specimens [9 mm diameter at (0.5, 1) mm thickness and 10 mm diameter at (1.5) mm thickness] were prepared using a stainless steel mold for hardness and compressive strength measurements. A composite resin was polymerized with an aid of a (DC 5V/1A) lamp for (10, 20 and 30) sec. Three specimens were used for each group. The results were analyzed using (linear logarithmic, quadratic, linear and power) tests. The different groups showed significant variability in relation, with a significant interaction between the groups. The result showed that the greater thickness more efficient for polymerization than the small thickness and the long irradiation time more efficient for polymerization than short irradiation time, long irradiation time diffusion in deep portions of the sample convert to polymer and this provides good polymerization and then good mechanical properties.