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[\[PDF \(575K\)\]](#) [\[References\]](#)**Microhardness Evaluation of Resin Composites Polymerized by Three Different Light Sources**[Ihsan HUBBEZOGLU^{1\)}](#), [Giray BOLAYIR^{2\)}](#), [Orhan Murat DOGAN^{2\)}](#), [Arife DOGAN^{3\)}](#), [Ali ÖZER^{4\)}](#) and [Bülent BEK^{2\)}](#)

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Abstract:

This study examined the surface microhardness of four kinds of resin composites with different fillers and resin matrices. Ten specimens of 2 mm thickness and 4 mm diameter of each resin composite were polymerized using a halogen light, a blue light-emitted diode, and a plasma arc unit. Microhardness evaluation was performed at top and bottom surfaces for each specimen using a Vickers microhardness tester. Furthermore, morphologies of the polished top surfaces of composites cured with blue light-emitted diode were observed using scanning electron microscopy. Results indicated that composites cured with halogen or blue light-emitted diode light yielded higher microhardness values, although it also appeared to depend on the type of composite cured. Plasma arc curing according to manufacturer's instructions yielded the lowest microhardness values for all the materials. Among the materials tested, the nanofilled resin composite displayed the highest microhardness values for each curing regime.

Key words:[Microhardness](#), [Resin composite](#), [Light curing unit](#)



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