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ONLINE ISSN : 1881-1361

PRINT ISSN : 0287-4547

Dental Materials Journal

Vol. 27 (2008) , No. 4 p.523-533

[\[Image PDF \(656K\)\]](#) [\[References\]](#)**The Effects of Light Intensity and Light-curing Time on the Degree of Polymerization of Dental Composite Resins**[Chang-Jun BAEK^{1\)}](#), [Seok-Hee HYUN^{2\)}](#), [Sang-Kyu LEE^{1\)}](#), [Hyo-Joung SEOL^{1\)}](#), [Hyung-II KIM^{1\)}](#) and [Yong Hoon KWON^{1\)}](#)

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(Received September 7, 2007)

(Accepted January 25, 2008)

Abstract:

The aim of this study was to investigate the effects of light intensity and light-curing time on the polymerization of composite resins. Four composite resins were light-cured with different light-curing conditions. In the non-thermocycled case, specimens showed almost the same or similar microhardness values if energy density was identical or similar. As the energy density decreased, maximum polymerization shrinkage decreased. At higher energy densities, specimens had a lower coefficient of thermal expansion than at lower energy densities. At the same or similar energy density, most resin products showed coefficient values which were not statistically different. After 10,000 thermocycles, specimens showed decreases of 2.4–16.5% and 4.6–25.2% in microhardness and coefficient of thermal expansion respectively. Within the limitations of the present study, it was found that light-curing composite resins with higher energy density was beneficial to acquiring higher microhardness values and lower coefficients of thermal expansion.

Key words:[Light intensity](#), [Light-curing time](#), [Polymerization](#)[\[Image PDF \(656K\)\]](#) [\[References\]](#)

To cite this article:

Chang-Jun BAEK, Seok-Hee HYUN, Sang-Kyu LEE, Hyo-Joung SEOL, Hyung-II KIM and Yong Hoon KWON. The Effects of Light Intensity and Light-curing Time on the Degree of Polymerization of Dental Composite Resins . Dent. Mater. J. 2008; 27: 523-533 .

doi:10.4012/dmj.27.523

JOI JST.JSTAGE/dmj/27.523

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