

The work is focused on monitoring the impact of several different types of polymerization lamps to hardening of dimethacrylate based composite materials with camphorquinone and acylphosphine oxide initiation systems and epoxy based composite material. Variable parameters of the polymerization lamps were light output power, the emission spectrum, the thermal emission and the power distribution across the face of light guides. Extent of polymerization was evaluated by measuring the surface hardness, parameters of lamps were evaluated by radiometric methods, the temperature change by a thermocouple. The power distribution across the face of light guides was measured by image analysis and verified by measuring the distribution of hardness in the irradiated area of polymerized material. The goal was to obtain independent data on the influence of controlled parameters on the polymerization of composite materials used in dentistry, with an impact on the life of composite reconstruction of teeth and body burden of substances leached from poorly polymerized material.