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Nanotechnology and
its Applications**

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EDITORS

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CHAPTER 5

Glass Ionomer Cements

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Introduction

Dental cements are of few materials in dentistry that are used frequently. There is no one universally accepted cement that fulfills all applications; there are a variety of cements whose properties and manipulation lead them to be an appropriate choice for a given application (Hatrack et al., 2003).

Cements are generally hard, brittle materials formed when a powdered oxide or a glass is mixed with a liquid. When mixed to a cementing consistency, dental cements are used to retain ceramic crowns and esthetic inlays, onlays, and veneers. When mixed to a thicker consistency, some cement types are used as temporary filling materials or to provide thermal insulation and mechanical support to teeth restored with other materials, such as amalgam, composites, or gold. Cements classified as low-strength bases or liners provide protection to the pulp from irritants or serve therapeutically as pulp-capping agents. Some other types of cement are used for special purposes in endodontics and orthodontics (Annusavice, 2004). Cements are classified according to function as in (Table 1).