decreases porosity. Thus, the concentration of guluronic acid should be maintained greater than 60% and not very high. The properties have much influence on its presence, use, quality, and potential applicability.

3.6 Applications

Alginate is a multifunctional substance. Large numbers of opportunities are there for alginate in medical and industrial fields. There is a large range of synthetic materials available for the treatment and protection of a bioactive agent. Among those, alginate serves as the naturally available material. Alginate composites or blends can be made into different forms as beads, microparticles, films, matrix, sponge, fibers, nanoparticles, etc. where different types are applicable in wide fields. These can be used in different fields such as pharmaceutical, food, paper making, adhesive, biomedicines, plastics, etc. as they possess versatile and specific physiochemical and biological properties. The alginate is an irreversible and elastic hydrocolloid impression substance. There are several reasons why alginate is preferable, including its solubility in water at normal room temperature, for gel formation does not need heating and cooling cycles. Thus, it serves as the best material for impression in dental practices, as it is simple in impression, low cost, and essential. It is applicable not only in dental practices but also in other clinical fields. Encapsulation is the process for which alginate serves as the best carrier. It acts as a matrix in case of bioartificial organs. The properties of alginate include promotion of cell proliferation, and biocompatibility makes it easy to use in different fields such as tissue engineering, wound dressing, and delivery of drugs. Biodegradability of alginate increases its application in cosmetic and food industries. The use of nonbiodegradable polymers, which are synthetic, can be replaced by producing a superabsorbent using such natural polysaccharides [15]. There are many ways available to prepare composites using alginate.

For the case of dental impression, it requires an alginate-like material. This material settles faster, is easy to use, and is economical. It can be operated easily by maintaining the temperature of liquid like water; the setting time can be managed.

In food industries, the use of alginic acid and their derivatives can be summarized as follows:

- Alginic acid: as a thickener, emulsifier, formulation aid, and stabilizer.