

forms chemical bonds with hydroxyapatite crystals of the enamel, causing tear upon removal [38]. Hence, it is highly advisable that that teeth should not be left to dry completely [17]. Furthermore, the presence of air bubbles in the mouth will create voids when the impression has been taken. This, in turn, will negatively affect the accurate impression of the dental arch. To avoid this, it is required that the patient rinses with water and mouthwash mixture. This will help eliminate mucin (heavily glycosylated proteins), which lowers the surface tension, thereby eliminating air bubbles [17].

Additionally, for impression needed for removable prostheses such as dentures, impression of the sulci is significantly important. As such, Nandini *et al.*, [17] suggested that pre-packing of the sulci, particularly of the lower lingual, upper labial, and humular notches in the buccal areas with alginate impression material, will help improve the clinical accuracy of the impression.

#### 7.4.4 Impression Taking Using Alginate Material

The way and manner alginate impression is taken could make or mar the accurate impression of the dental arch. In order to ensure that detailed and accurate impression is achieved, the mixed alginate should be rubbed onto the occlusal surfaces with a gloved finger, thus filling the occlusal grooves. Nandini *et al.*, [17] hinted that impression tray is positioned in the mouth by retracting the patient's lips on one side using a gloved finger or mouth mirror, while on the other side, the tray is rotated in the mouth. Critically, the tray must be placed centrally in the mouth and held in place with light pressure. More so, it is highly advisable that when the tray is seated in the mouth, pressure should be relieved and tray held lightly in place to prevent unseating. Nandini *et al.*, [17] reported that alginate impression materials begin setting from the tooth surface to the impression tray; hence, pressure will cause impression to set under strain. The consequence of this is that, on removing from the mouth, these strains are released, resulting to distortion and inaccurate cast. Equally important, removal of the impression before it completely sets will also cause similar strain and distortion.

In an attempt to give more quality assurance in the setting time of alginate, manufacturers have introduced color-changing alginates that indicate each phase of the alginate setting time. The color-changing alginate contains pigments (Cresol Red, naphtholphthalein, Tropaeolin OOO, Thymol) that react with pH during setting reactions [39]. The advantage of the color-changing alginate is that operators can avoid the impression being removed from the mouth before setting time is completed. It also puts a sensitive patient's mind at ease considering that the change in color is an indicative of the material being ready for removal.