Table 1. Network connectivity (*NC*), bulk density (), molar volume (), oxygen molar volume (*VO*), oxygen packing density (*OPD*), and ionicity () of SNb3 and SNb3Ga3 bioactive glass.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Glass** | **NC** |  |  |  |  |  |
| **SNb3** | 2.91 | 0.819 | 80.10 | 45.51 | 21.97 | 0.5829 |
| **SNb3Ga3** | 2.98 | 0.748 | 93.06 | 51.13 | 19.56 | 0.5733 |

NC values were calculated for SNb3 and SNb3Ga3 compositions assuming that all phosphorus species occupy tetrahedral sites, while niobium species occupy octahedral sites. For the Ga species, it was assumed that 60% of the Ga species are in tetrahedral sites and the remaining 40% are in the octahedral form for the SNb3Ga3 glass[49]. All Nb and 60% of Ga species are participating in the vitreous network through the bonding between the Nb and Ga polyhedra with the silica tetrahedra, SiO4. The molar volume (), oxygen molar volume (*VO*), oxygen packing density (*OPD*), and ionicity () for SNb3 and SNb3Ga3 bioactive glass were calculated using the relations described by Moustafa *et al.[35]*