

Acronyms and symbol

45S5 bioactive glass ($\text{Na}_2\text{O}-\text{CaO}-\text{SiO}_2-\text{P}_2\text{O}_5$)

Hydroxyapatite HA $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$

Calcium nitrate tetrahydrate ($\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$) (CNT)

Phosphoric acid (H_3PO_4) (Loba Chemie Pvt. Ltd, India)

Ammonia (NH_3) (Loba Chemie Pvt. Ltd, India)

Titanium oxide (TiO_2) (Merck, India)

Ferric oxide (Fe_2O_3) (Merck, India)

Cobalt oxide (CoO) (Merck, India)

Niobium pentoxide (Nb_2O_5) (Merck, India)

Calcium carbonate (CaCO_3) (Merck, India)

Sodium carbonate (Na_2CO_3) (Merck, India)

Ammonium dehydrogenate orthophosphate ($\text{NH}_4\text{H}_2\text{PO}_4$) (Merck, India)

Differential thermal analyzer (SETARAM, France)

NaCl , KCl , NaHCO_3 , $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$, CaCl_2 and KH_2PO_4 (Merck, India)

Universal Biomicro processor pH meter Made by India (New Delhi)

X-ray diffractometer

Fourier Transform Infrared Spectrometer, (Bruker Tensor 27 FTIR, Germany)

Instron Universal Testing Machine (AGS 10kND, SHIMADZU)

pH-EC meter (model-1611, ESICO-USA)

Olympus instrument (M-45, USA) made by USA

Phosphate saline buffer (Himedia, Mumbai, India)

Fetus bovine serum (FBS) (Himedia, Mumbai, India)

5% CO_2 in a humidified environment

SiO_2 - Silicon dioxide

Atomic Force Microscopy (AFM)