composite. Biocompatibility was evaluated seeding osteoblast-like ROS17/2.8 cells on composite samples, preconditioned for 72 h in DMEM culture medium. After 7 days of incubation, cells attached and proliferated well on the surface of these composite materials (Li et al., 2011).

Similar to the work described in Li et al. (2011), magnesium ferrite composites were fabricated by sintering pressed mixtures of magnesium ferrite and wollastonite-fluorapatite glass powders (1:10 wt ratio) at 1200 °C for 2 h, followed by rapid quenching in air (Da Li et al., 2010). MgO and Fe_2O_3 powders (1:1 molar ratio) were heated at 1080 °C for 4 h, ground, sieved, and reheated to 1200°C for 2 h. The wollastonite-fluorapatite glass powder was produced by heating the sol-gel precursors at 800°C for 1 h and at 1150°C for 2 h, followed by grinding and sieving. The main phases identified in the composites were $CaSiO_3$, $Ca_5(PO_4)_3F$, $Ca_2MgSi_2O_7$, and $MgFe_2O_4$ (magnetic phase). Samples immersed in SBF for 14 days showed bioactivity behavior. Biocompatibility studies using osteoblast-like ROS17/2.8 cells showed that the cells attached and proliferated well on the surface of preconditioned (72 h in DMEM culture medium) composite materials after 3 days of incubation (Da Li et al., 2010).

Further composite glass-ceramics were obtained by sintering mixtures of barium ferrite ($BaFe_{12}O_{19}$) and 45S5 bioglass powders at 800°C for 2 h (Leenakul et al., 2013b). The maximum amount of barium ferrite in these samples was 40 wt%. Barium ferrite powder was produced by sintering a mixture of Fe_2O_3 and $BaCO_3$ (molar ratio of 6:1) at 1100°C for 3 h, while 45S5 bioglass was produced by traditional melting. The crystalline phases identified in all samples were sodium calcium silicate ($Na_2Ca_2Si_3O_9$) and barium iron oxide ($BaFe_{12}O_{19}$), the magnetic phase. All samples showed bioactive behavior after 14 days of immersion in SBF (Leenakul et al., 2013b). Bioactivity improved with increasing the barium ferrite content (Leenakul et al., 2013a). The magnetic properties depend on the amount of barium ferrite and the sintering temperature (Leenakul et al., 2015).

Other composite materials have been synthesized using strontium hexaferrite ($SrFe_{12}O_{19}$) as the magnetic phase. Abbasi et al. (2014) reported a sintering method where soda-lime-silica waste glass was used as the main raw material. The calculated amounts of $CaCO_3$, Na_2CO_3, and P_2O_5 were mixed with the waste glass powder in order to obtain a glass composition similar to 45S5 Bioglass. Strontium hexaferrite was produced by calcination of coprecipitation-derived raw materials at 750°C for 3 h. Glass and resultant strontium hexaferrite powders were ground, mixed, and sintered at 700°C for 1.5 h. The maximum amount of strontium hexaferrite in the composite was 20 wt%. The main crystalline phases in the composite after sintering were $Na_2Ca_2Si_3O_9$, $NaCaPO_4$, and $SrFe_{12}O_{19}$. Bioactivity was assessed in Hank's solution (Abbasi et al., 2014). Increasing the amount of strontium hexaferrite in the composite decreased the bioactivity properties. Samples containing 5 wt% strontium hexaferrite started to form an apatite layer after 14 days in Hank's solution (Abbasi et al., 2014).