Recent advances in theoretical understanding of magnetic solids have shown that by utilising a more general spin-symmetry description and defining a new elementary magnetic phase—altermagnetism, in addition to ferromagnetism and antiferromagnetism, we may interpret certain properties of magnetic materials which did not match the ferromagnetic nor the antiferromagnetic description. Properties of altermagnets have been predicted, and some have been experimentally confirmed in certain materials. The thesis focuses on an altermagnetic material, ruthenium dioxide (RuO_2). The aim is to explore its altermagnetic properties and generation of spin currents in the material by means of terahertz spectroscopy. For this purpose, nine bilayers with metal, ferromagnetic and RuO_2 layers were manufactured. The bilayers were excited with femtosecond pulses from a titanium-sapphire laser to generate THz waves, and the radiation was detected by the standard THz time-domain spectroscopy method. Terahertz emission from bilayers with RuO_2 was found to be low, as compared to standard spintronic THz emitters, although observable. Possible explanations of the signal magnitude are given in the discussion. The detected signals were dependent on the crystal orientation; however, their microscopic sources remain unclear.