Miyakejima volcano showed the intensive degassing activity for more than ten years starting from August 2000. The SO$_2$ emission rate, peaked at about 50 kt/d at the end of 2000, gradually decreased down to 1000 t/d until 2010. We discuss the degassing process of the volcano based on flux and composition changes of volcanic gases during these 10 years and the results of melt inclusions and volcanic ash analyses, together with the developments of the volcanic gas measurements techniques during these ten years. Volcanic gas composition measurements were conducted by the heli-borne measurement in the earlier stage and then application of the newly developed Multi-GAS. Most significant feature of the degassing activity at the Miyakejima volcano is the stable composition of the volcanic gases for 10 years long. The intensive and stable degassing at Miyakejima is likely caused by conduit magma convection. The constant volcanic gas composition regardless of the large decrease in the SO$_2$ emission rates from 50 to 1 kt/d implies that there were no changes in the degassing mechanism and its intensive parameters such as degassing pressure, but the change was caused by the decrease of magma flux through the conduit. Melt inclusion study indicates that the degassing is supplied by volatile-rich basaltic magma with about 3.5 wt. %, Considering the 0.20 wt.% S content of the basaltic magma, the emission of 24 Mt of SO$_2$ during the ten years requires degassing of 6000 Mt (2.2 km$^3$) magma.