AKARI/IRC Imaging Observations of the Merger Remnant NGC 2782

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We present the observations of the peculiar galaxy NGC 2782 at six infrared bands of the Infrared Camera (IRC) onboard *AKARI* (Onaka et al. 2007, PASJ, **59**, S401). NGC 2782 is known as a merger remnant and shows a large HI gas tail (~50kpc) in the western side of the galaxy. Another tail (~25kpc) is also seen in the eastern side. It is thought that NGC 2782 underwent a violent merger event, in which unequal mass galaxies made a nearly head-on collision (Smith 1994, AJ, **107**, 1695). Most of the gas component of the companion galaxy, which collided with the main galaxy from the west and went through it, has been stripped off in the collision, making the eastern tail of the HI gas and leaving a relic of the stellar component at the east of the main galaxy. The IRC images show that the distribution at S7 (7μm) and S11 (11μm), both of which contain the PAH emission at 6.2 and 7.7μm, and 11.3μm, respectively, has an extended structure very similar to the HI eastern tail. Also the S7 to S11 color, which is supposed to be sensitive to the ionization fraction of PAHs, is found to remain almost constant in the galaxy. We try to fit the observed fluxes using the *DustEM* code (Compiègne et al. 2011, A&A, **525**, A103). The nuclear region (<15") show strong emission at 15 and 24μm, which can be accounted for either by the increase of the very small amorphous carbon grains or the increase of the incident radiation field. In the eastern tail region, the SED can be fitted with a weak interstellar radiation field and a decrease in the abundance of large dust grains or an increase of PAHs. The latter suggests that PAHs are selectively stripped along with the HI gas. In this case PAHs must survive for more than a few 100 Myr after the merger event probably because of the weak stellar radiation.