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Carbon dust particles generated due to H₂ plasma-carbon wall interaction HIROSHI MIYATA, KATSUSHI NISHIYAMA, SHINYA IWASHITA, HIDEFUMI MATSUZAKI, DAISUKE YAMASHITA, GIICHIRO UCHIDA, NAHO ITAGAKI, KUNIHIRO KAMATAKI, KAZUNORI KOGA, MASAHARU SHIRATANI, Kyushu University, NAOKO ASHIKAWA, SUGURU MASUZAKI, KIYOHICO NISHIMURA, AKIO SAGARA, National Institute for Fusion Science, LHD EXPERIMENTAL GROUP, NATIONAL INSTITUTE FOR FUSION SCIENCE TEAM — Formation of dust particles due to plasma-wall interaction has attracted much attention because dust particles can contain a large amount of tritium and may deteriorate plasma confinement in fusion devices. Therefore, it is important to reveal their formation and transport mechanisms. Experiments were carried out with a helicon plasma reactor at Kyushu University and the Large Helical Device at NIFS. Hydrogen helicon plasmas were generated by applying rf voltage to a helicon antenna. Dust particles collected using Si substrates of grounded, floating. Three kinds of dust particles, spherical ones, agglomerates, and flakes, were collected on the grounded substrates both in the helicon plasma reactor and in LHD, whereas two kinds of dust particles, spherical ones and flakes, were obtained on the floating substrates in LHD. Substrate potential may affect transport and sticking of dust particles.

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