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Nano-block manipulation in CVD plasmas HIROSHI MIYATA, SHINYA IWASHITA, YASUYUKI YAMADA, KAZUNORI KOGA, MASAHARU SHIRATANI, Kyushu University — We have proposed a novel nano-system construction method using plasmas [1-3]. We have succeeded in realizing size control of nano-blocks and their rapid transport towards a substrate by using pulse discharges with amplitude modulation (AM) of the discharge voltage [1- 3]. We are developing a method for their three dimensional transport using a capacitively coupled RF discharge reactor having a grounded electrode with needles. During the period of AM nano-blocks are transported from their generated region rear the powered electrode to the top of the needle. Such three dimensional transport needs an asymmetric electric potential profile, in other words, a large voltage drop across the sheath near the powered electrode. We will report the experimental results and discuss the mechanism of the three dimensional transport.

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