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**In-situ observation of the transformation process into the nano-contact of single shell carbon fullerene using TEM-STM** MAKOTO YOSHIDA, YOSHIHIKO KURUI, Department of Physics Tokyo Institute of Technology, YOSHIFUMI OSHIMA, Department of Materials Science and Engineering Tokyo Institute of Technology, KUNIO TAKAYANAGI, Department of Physics Tokyo Institute of Technology, CREST JST TEAM — In this study, we proposed the simple fabrication method of the single shell carbon fullerene (SSF) from an amorphous carbon between two gold electrodes by applying the bias voltage. The STM system which was combined with TEM system was employed as applying the bias voltage and observing the fabrication process in high vacuum condition (about  $10^{-6}$  [Pa]) at room temperature. As the applied bias voltage was increased, the transformation into the SSF via the glassy carbon was caused. It was found that transformation into the SSF occurred above 0.6V. In this method, we obtained the SSF which was range from  $C_{60}$  to  $C_{620}$ . This proposal method is very easier than the previous techniques for obtaining the SSF between two metallic electrodes, for example the combination of the synthesis and evaporation of the SSF, and very useful for researching the electrical conductance property such as the structure effect, the effect of the connection way between both metallic electrodes.

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