

# Simulation of Processes of Modification of Polymer Materials by Low-Temperature Plasma

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The results of molecular dynamics modeling showed that ion bombardment of polypropylene by argon ions in low-pressure radio-frequency plasma leads both to a change in the polymer structure and conformational transformations of macromolecules, and to the breaking of covalent chemical bonds. During ion bombardment, the main chain of the polymer and CH bonds are broken; sputtered particles are single atoms and hydrocarbon radicals with the number of carbon atoms from 1 to 3. Regardless of the initial kinetic energy of the argon ion, the decrease in kinetic energy is exponential [1].

- [1] Timoshina Y A, Voznesensky E F and Zheltukhin V S 2021 *Technologies and quality* **3** 18–23