

ABSTRACT

The present invention discloses a biaxial or tri-axial eccentric rotor volume pulsed deformation plasticizing method and device. The method is characterized in that: the conveying volume of materials formed between two or three engaged eccentric rotors, which are formed by spiral structures and eccentric cylindrical structures connected alternately, and an inner surface of a stator changes periodically along the axial direction and the radial direction of the rotors, achieving the volume pulsed deformation plasticizing and conveying of the materials during engaged rotation of the two or three engaged eccentric rotors. The device's eccentric rotors are all formed by length-varying spiral structures and eccentric cylindrical structures connected alternately; the spiral structures of the eccentric rotors are engaged to each other; the axial positions of eccentric cylindrical structures of the two or three rotors are the same. The present invention can implement extrusion of polymer materials or implement, in combination with a plunger injection unit, injection molding of polymer materials, and have many features such as desirable mixing and plasticizing effects for materials, a short thermo-mechanical course, low power consumption, and wide adaptability.