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## Developing a Simple Method Using Ionizing Radiation to Produce Polyacrylic Acid Based Nanoparticles

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The present work aims at synthesizing polyacrylic acid-based nano- particles using ionizing radiation without surfactants. In this regard, acrylic acid in a solution in the presence of poly aliphatic ester polymers like polycaprolactone and polylactic acid was exposed to ionizing radiation at different dose rates to produce chemically crosslinked poly aliphatic ester /PAAc nanoparticles. Particle size and swellability of the prepared nanoparticles can be controlled by irradiation dose, irradiation atmosphere, and feed copolymer composition and concentration. Characterization of the prepared nanoparticles including morphological structure, pH sensitivity and rheological characteristics was carried out using dynamic light scattering (DLS), viscometry, transmission electron microscopy (TEM) and atomic force microscopy (AFM) techniques

### Country/Organization invited to participate

Egypt

**Primary author:** Mr ABDELREHIM, Hassan (Atomic Energy Authority of Egypt, Egypt)

**Presenter:** Mr ABDELREHIM, Hassan (Atomic Energy Authority of Egypt, Egypt)

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