



## Dr. Aristeidis Papagiannopoulos

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### Research topics

Development and physicochemical characterization of nanobiomaterials based on polysaccharides and proteins of interest to food and biomedical sciences. The design and optimization of protein/polysaccharide nanoparticles using physical interactions for the delivery pharmaceuticals and nutrients is an important part of our research as it offers biocompatible products without the use of any chemical reaction or toxic solvent. The modification of solid surfaces by polysaccharide or protein/polysaccharide multilayers is investigated for applications in cell culture and tissue engineering. Hydrogels and complex fluids of biological macromolecules are developed based on electrostatic interactions and self-organization. There is long experience in the application, data analysis and software development for small angle scattering of neutrons and X-rays in soft nanostructured materials and biomaterials. For the characterization and optimization of complex biopolymer fluids rheology and microrheology methods are developed. Interface studies include experimental methods as surface plasmon resonance, atomic force microscopy and neutron reflectivity.

### Scientific research

Author and co-author of 62 ISI articles (47 in Q1 zone and 11 in Q2 zone), 18 book chapters, 2 articles in proceedings, 39 posters, 35 oral communications, member in 13 research national/international grants and Principal Investigator/Task Leader for 3 international grants, 818 citations (HI = 16).

### Visibility

<http://www.eie.gr/nhrf/institutes/tpci/cvs/cv-papagiannopoulos-en.pdf>

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### Relevant publications

1. A. Papagiannopoulos, K. Sotiropoulos, A. Radulescu, **Scattering investigation of multiscale organization in aqueous solutions of native xanthan**, *Carbohydr. Polym.* 153 (2016) 196-20, **Q1** (IF<sub>2021</sub> = 10.723). DOI: 10.1016/j.carbpol.2016.07.104
2. A. Papagiannopoulos, E. Vlassi, **Stimuli-responsive nanoparticles by thermal treatment of bovine serum albumin inside its complexes with chondroitin sulfate**, *Food Hydrocolloids* 87 (2019) 602-610, **Q1** (IF<sub>2021</sub> = 11.504). DOI: 10.1016/j.foodhyd.2018.08.054
3. A. Papagiannopoulos, E. Vlassi, A. Radulescu, **Reorganizations inside thermally stabilized protein/polysaccharide nanocarriers investigated by small angle neutron scattering**, *Carbohydr. Polym.* 218 (2019) 218-225. **Q1** (IF<sub>2021</sub> = 10.723). DOI: 10.1016/j.carbpol.2019.04.077
4. E. Vlassi, A. Papagiannopoulos, **Nanof ormulation of fibrinogen by thermal stabilization of its electrostatic complexes with hyaluronic acid**, *Internat. J. Biol. Macromol.* 158 (2020) 251-257. **Q1** (IF<sub>2021</sub> = 8.025). DOI: 10.1016/j.ijbiomac.2020.04.244
5. A. Papagiannopoulos, D. Selianitis, A. Chroni, J. Allwang, Y. Li, C.M. Papadakis, **Preparation of trypsin-based nanoparticles, colloidal properties and ability to bind bioactive compounds**, *Internat. J. Biol. Macromol.* 208 (2022) 678-687. **Q1** (IF<sub>2021</sub> = 8.025). DOI: 10.1016/j.ijbiomac.2022.03.131