



MINISTRY OF EDUCATION SCIENCE
OF THE RUSSIAN FEDERAL STATE BUDGET EDUCATIONAL
INSTITUTION OF HIGHER EDUCATION
"VORONEZH STATE UNIVERSITY"

Chemical faculty

Department of Macromolecular Compounds and Colloidal Chemistry

Synthesis of a silver-containing composite based on polymer microgel

Completed by a student of the 1st year of the master's program

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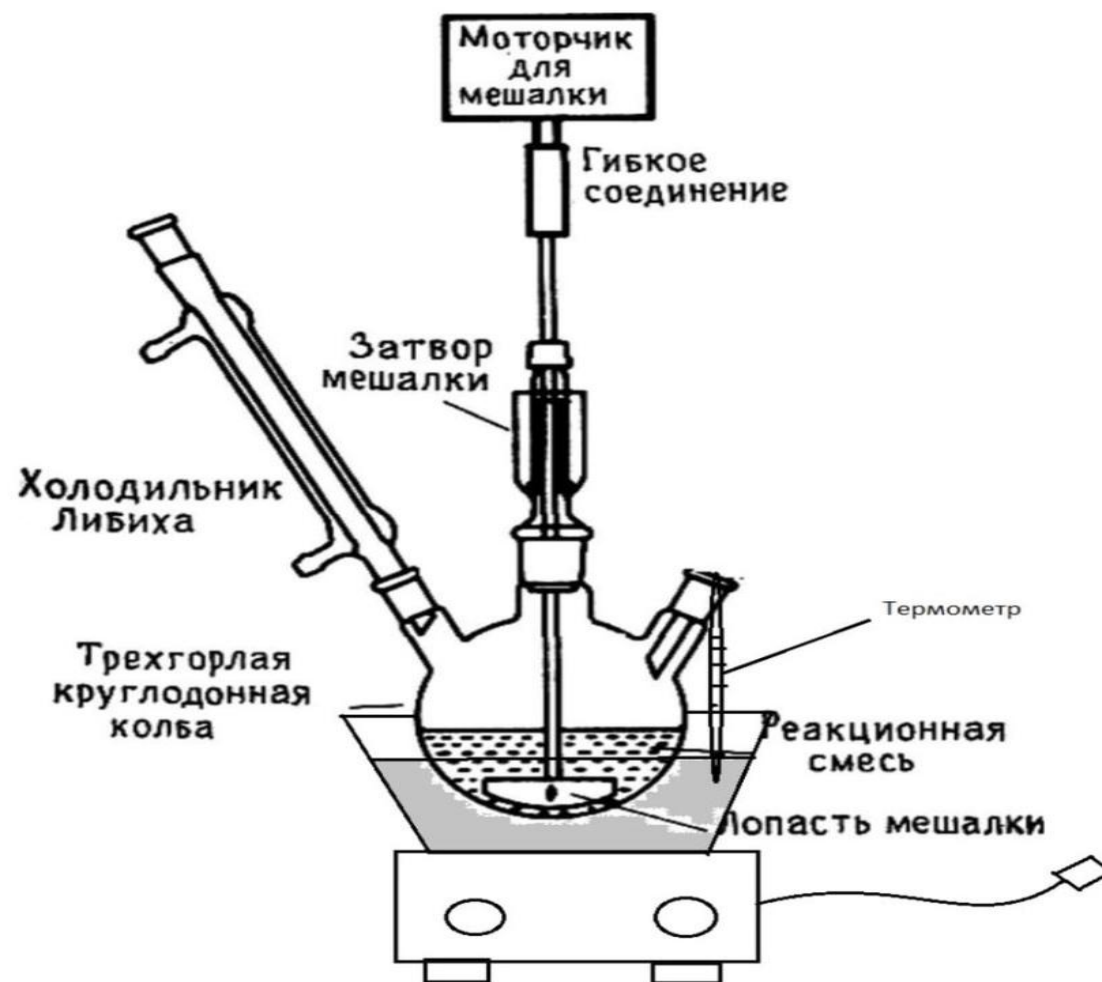
Goal:

Investigation of the conditions for the synthesis of a silver-containing composite based on poly-N-vinylcaprolactam microgel stabilized with a surface-active polymer Pluronic P123.

Plan of presentation

Relevancy of the study

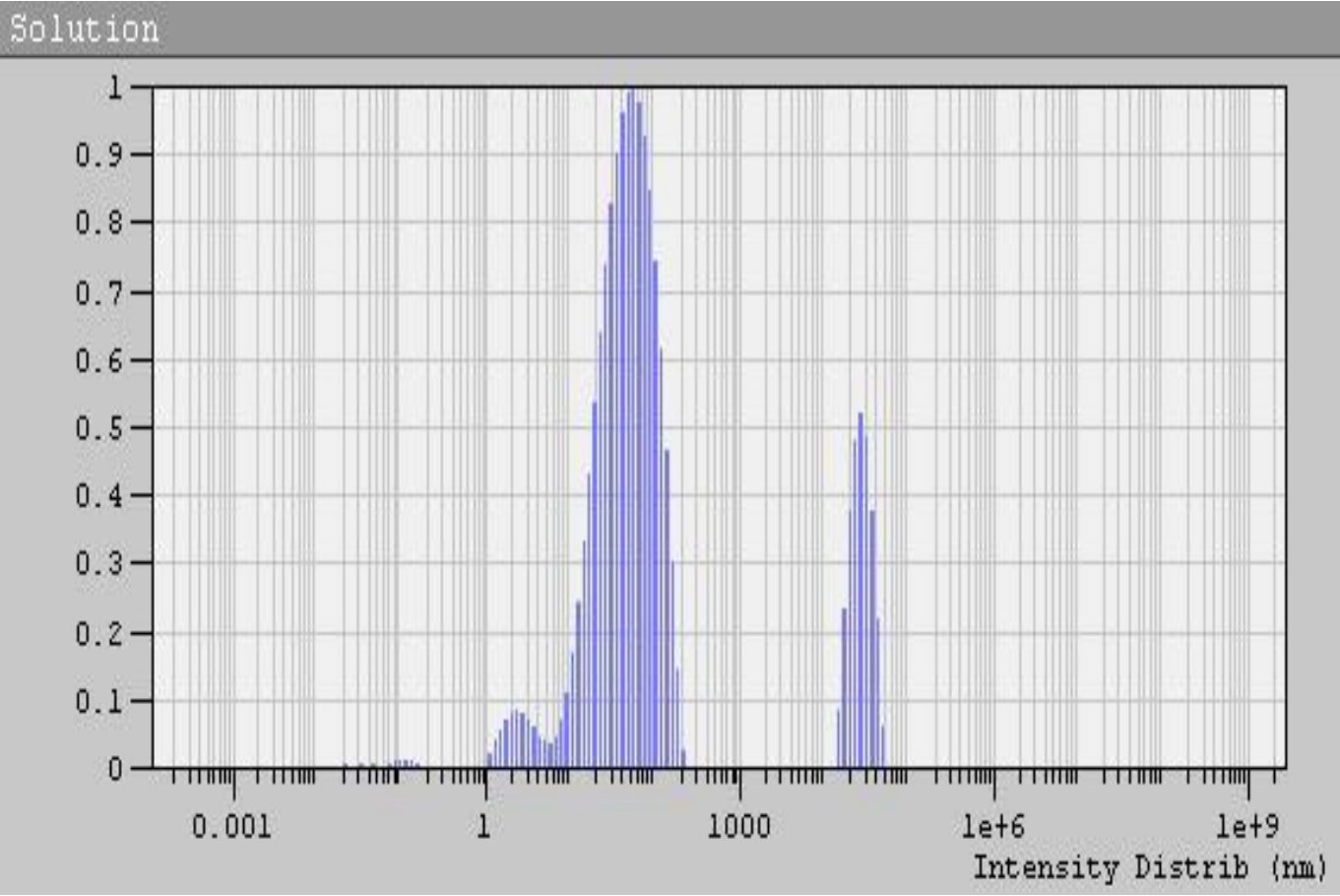
Scheme of installation for carrying out polymerization



Initial polymerization mixture

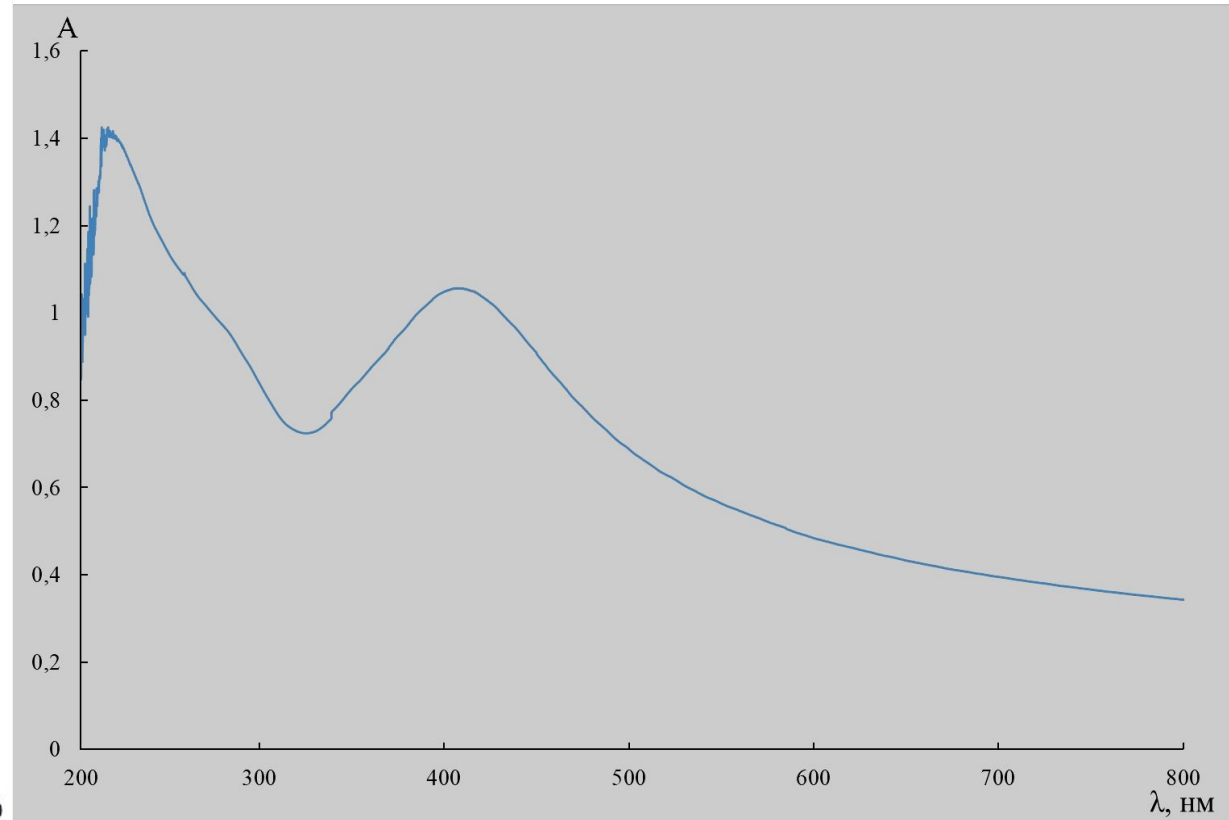
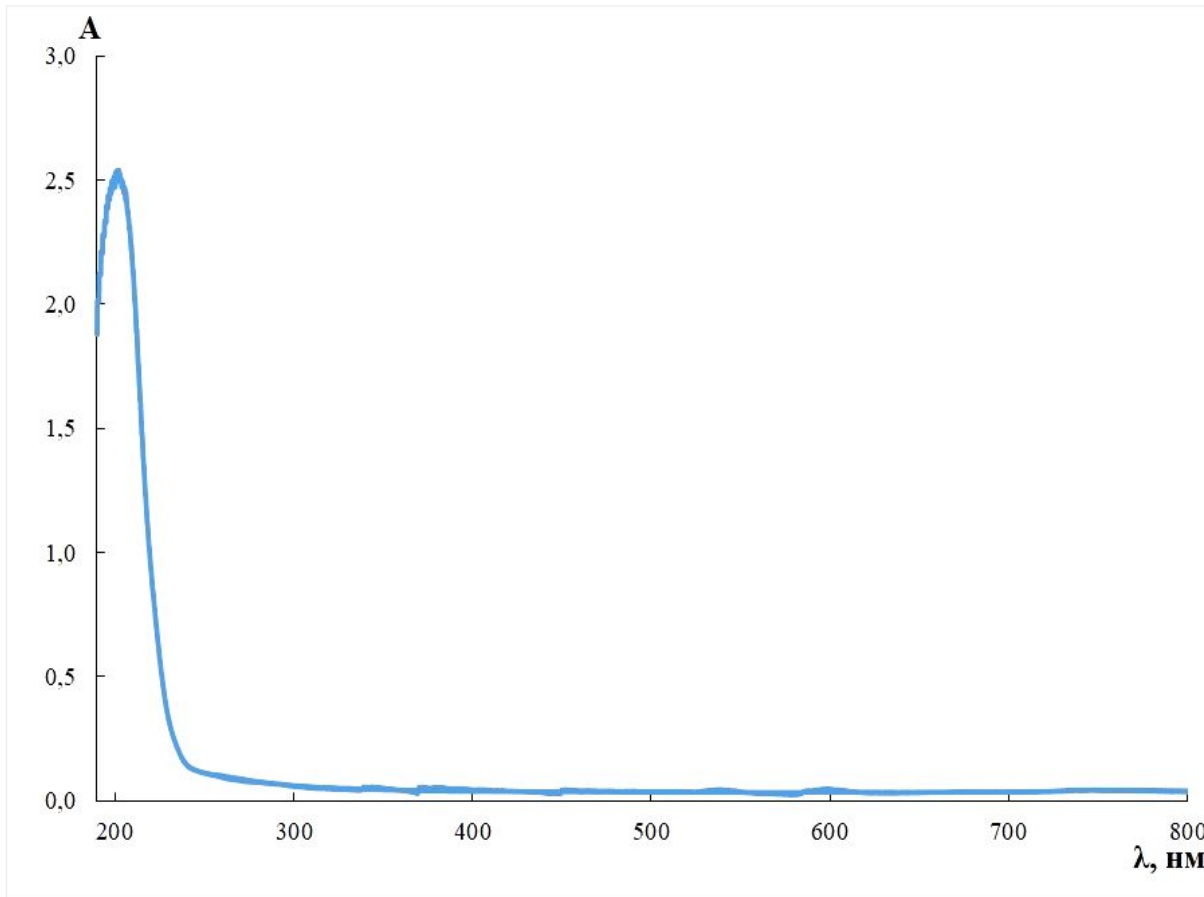
Component	Quantity
Monomer N-vinylcaprolactam (VK)	1% by weight reaction mixtures
Crosslinking agent methylene bis-acrylamide (MBAA)	2% by weight of monomer
Emulsifier Pluronic P123	0.5 - 1.5% by weight of the reaction. mixtures
Initiator potassium persulfate (PSK)	10% by weight of monomer
Solvent Water Toluene	95% by weight reaction. mixtures 5% by weight reaction. mixtures

Size distribution histogram and hydrodynamic radii of silver-containing PVCL microgel particles



Fraction number	1	2	3
Fraction share, %	3.7	79.2	17.1
Hydrodynamic radius Rh, nm	2.506	56.46	2.7e+4

UV spectrum of silver-containing PVC microgel



Results

- That brings me to the last part of my talk. As a result of the synthesis, a polymer microgel was obtained, the particle diagram of which is shown on the slide. Inside - cross-linked PVC, outside - surfactant Pluronic P 123.

Conclusions

I'm now approaching the end of my presentation. In conclusion, I'd like to say that, from my point of view, received materials meets the objectives of the research, nevertheless, it requires more time and work for deepest and strongest study. Thank you for your attention! You are welcome with your questions.