

Substance Release from Polyelectrolyte Microcapsules

Subjects: [Engineering, Electrical & Electronic](#)

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Controlled release of substance from polyelectrolyte microcapsules is a triggered degradation of the microcapsule membrane that is extensive enough to release the contained substances out into the environment. Membrane degradation can be a result of enzymatic digestion, ultrasound or light exposure, heating, application of a magnetic field, pH or ionic strength changes in the solution or bacteria-mediated processes. This technology can be used for the targeted release of drugs, and for the development of self-healing materials and new generation pesticides.

polyelectrolyte microcapsules

decapsulation

controlled release

Compared to other types of encapsulations, polyelectrolyte microcapsules have one of the main advantages—a variety of methods for the controlled release of the encapsulated substance. Due to the variability in the composition of a PMC shell, there are many ways to achieve the controlled release of the contained macromolecules. A variety of methods for the controlled release of substances from a PMC will allow the delivery of drugs to the target organ and release it locally, to create self-healing materials, pesticides (gradual release of pesticides) and genomic editing tools. Thus, the systematization of the results obtained over the past few decades on the controlled release of substances from polyelectrolyte microcapsules, will clarify the perception of the researcher in this field of study.

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