



## TECHNOLOGY

# A Novel Method of Colloidal Gel Preparation Useful for Surgical Embolization

## OVERVIEW

### Background

Colloidal gels- mixture of two or more substances that neither dissolve nor settle down in solution- can be generated by mixing two or more substances together that can form intricate mesh-like networks. These networks are sustained through various chemical interactions such as hydrogen bonds, electrostatic interactions or hydrophobic interactions. Colloidal gels were previously reported to be in use for drug-delivery, metal chelation during purification or filtration processes, and as topical or surgical therapeutic agents. Clinical use of colloidal gels requires that the gels are biocompatible, non-toxic, stable, and amenable to functionalization that can suit the desired application.

### Innovative Technology

Researchers at the University of Maryland have developed a novel method that leverages electrostatic and hydrophobic interactions to form a colloidal gel using biocompatible materials in a simple two-step process out of biocompatible materials. The gel material forms an intricate mesh-like network that resembles an “artificial clot” and can trap particles the size of blood cells easily. Such a property enables the use of such gels for surgical embolization wherein the “clot” can be injected into a blood vessel with the objective of restricting or terminating the blood flow to the targeted site.

### Advantages

- Simple method of preparation using biocompatible materials
- Stable gel-formation that can trap particles resembling blood cells

### Applications

- These gels may be used for surgical embolization and wound healing
- Possible application in topical application for delayed drug delivery

## CONTACT INFO

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## Additional Information

### INSTITUTION

University of Maryland, College Park

### PATENT STATUS

Pending

## **CATEGORIES**

- Drug delivery devices
- Biomaterials

## **EXTERNAL RESOURCES**

LS-2017-048