



## Ultrastable Nanoemulsions In Disordered And Ordered States

Tech ID: 31951 / UC Case 2019-954-0

### SUMMARY

Researchers in the Department of Chemistry and Biochemistry at UCLA have developed a method for the production of crystalline, iridescent emulsions stable to repeated dilutions.

### BACKGROUND

Many existing nanoemulsion formulations suffer from instability, especially with regards to dilution. To prevent the nano-droplets from coalescing, more and more stabilizing agent must be added as the emulsion concentration is reformulated for application.

### INNOVATION

Many existing nanoemulsion formulations suffer from instability, especially with regards to dilution. To prevent the nano-droplets from coalescing, more and more stabilizing agent must be added as the emulsion concentration is reformulated for application.

### APPLICATIONS

- ▶ Drug delivery
- ▶ Cosmetics
- ▶ Agrochemicals
- ▶ Food additives
- ▶ Healthcare broadly

### ADVANTAGES

- ▶ Stabilized by crystal packing rather than weak electrostatics
- ▶ Repeated dilution does not alter morphology
- ▶ Easily produced and isolated

### RELATED MATERIALS

- ▶ [Pagenkopp, M. J. and Mason, T. G. Surfactant Partitioning in Nanoemulsions. Langmuir, 34, 10309-103020. \(2018\)](#)

### PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	<a href="#">11,890,585</a>	02/06/2024	2019-954
United States Of America	Issued Patent	<a href="#">10,285,940</a>	05/14/2019	2014-182
United States Of America	Issued Patent	<a href="#">9073022</a>	07/07/2015	2008-625

### RELATED TECHNOLOGIES

- ▶ [Process For Recycling Surfactant In Nanoemulsion Production](#)
- ▶ [Method of Making Multicomponent Nanoemulsions](#)

### ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Measuring Size Distributions of Small-Scale Objects](#)
- ▶ [Process For Recycling Surfactant In Nanoemulsion Production](#)

### CONTACT

UCLA Technology Development Group  
[ncd@tdg.ucla.edu](mailto:ncd@tdg.ucla.edu)  
tel: 310.794.0558.



### INVENTORS

- ▶ Mason, Thomas G.

### OTHER INFORMATION

#### CATEGORIZED AS

- ▶ [Nanotechnology](#)
  - ▶ [Materials](#)
  - ▶ [NanoBio](#)

#### RELATED CASES

2019-954-0, 2007-574-0, 2008-433-0,  
2008-625-0, 2014-182-0, 2014-705-0

- ▶ [Method of Making Multicomponent Nanoemulsions](#)
- ▶ [Novel Multi-Scale Pre-Assembled Phases of Matter](#)
- ▶ [Shape-Controlled Particles Having Subparticle Geometrical Features](#)

# Gateway to Innovation, Research and Entrepreneurship

**UCLA Technology Development Group**

10889 Wilshire Blvd., Suite 920, Los Angeles, CA 90095

<https://tdg.ucla.edu>

Tel: 310.794.0558 | Fax: 310.794.0638 | [ncd@tdg.ucla.edu](mailto:ncd@tdg.ucla.edu)

© 2020 - 2024, The Regents of the University of California

[Terms of use](#)

[Privacy Notice](#)

