

Radionica

”Recent development in microencapsulation of food ingredients”

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Recent developments in microencapsulation of food ingredients

Teagasc Food Research Centre

Agenda 06/10/2016

9.15 am	Welcome address and overview of workshop Dr. Milica Pojic and Dr. Brijesh Tiwari
9.30 am	Food ingredients and additives Role of ingredients and additives for encapsulation
10.45 am	Tea and coffee break
11.15 am	Techniques for encapsulation Innovative techniques for encapsulation, entrapment and micro/nano encapsulation
1.00 pm	Lunch
2.00 pm	Group discussion/ breakout session Group of 5, followed by presentation by group leader (5+2 min each)
3.30 pm	Tea and coffee break
3.45 pm	Discussion and presentations
5.00 pm	Discussion and wrap up

Agenda 07/10/2016

9.00 am	Factors affecting stability of encapsulated ingredients Food quality incorporated with encapsulated ingredients
11.00 am	Tea and coffee break
11.30 am	Application of encapsulated probiotics in food (case study)
1.00 pm	Lunch
2.00 pm	Challenges and opportunities for encapsulation
3.30 pm	Tea and coffee break
4.00 pm	DISCUSSION, WRAP UP AND CERTIFICATES

Team

- Dr Brijesh K Tiwari (Brijesh.Tiwari@teagasc.ie)
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- Dr Carlos Alvarez (Carlos.Alvarez@teagasc.ie)



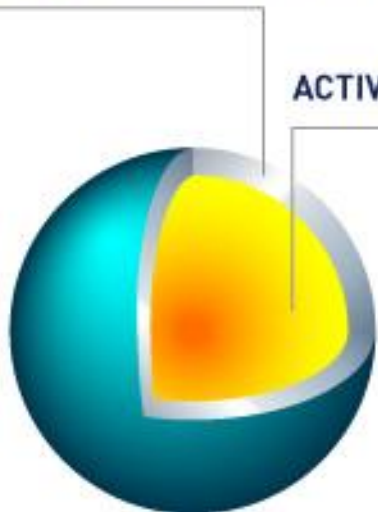
Definitions



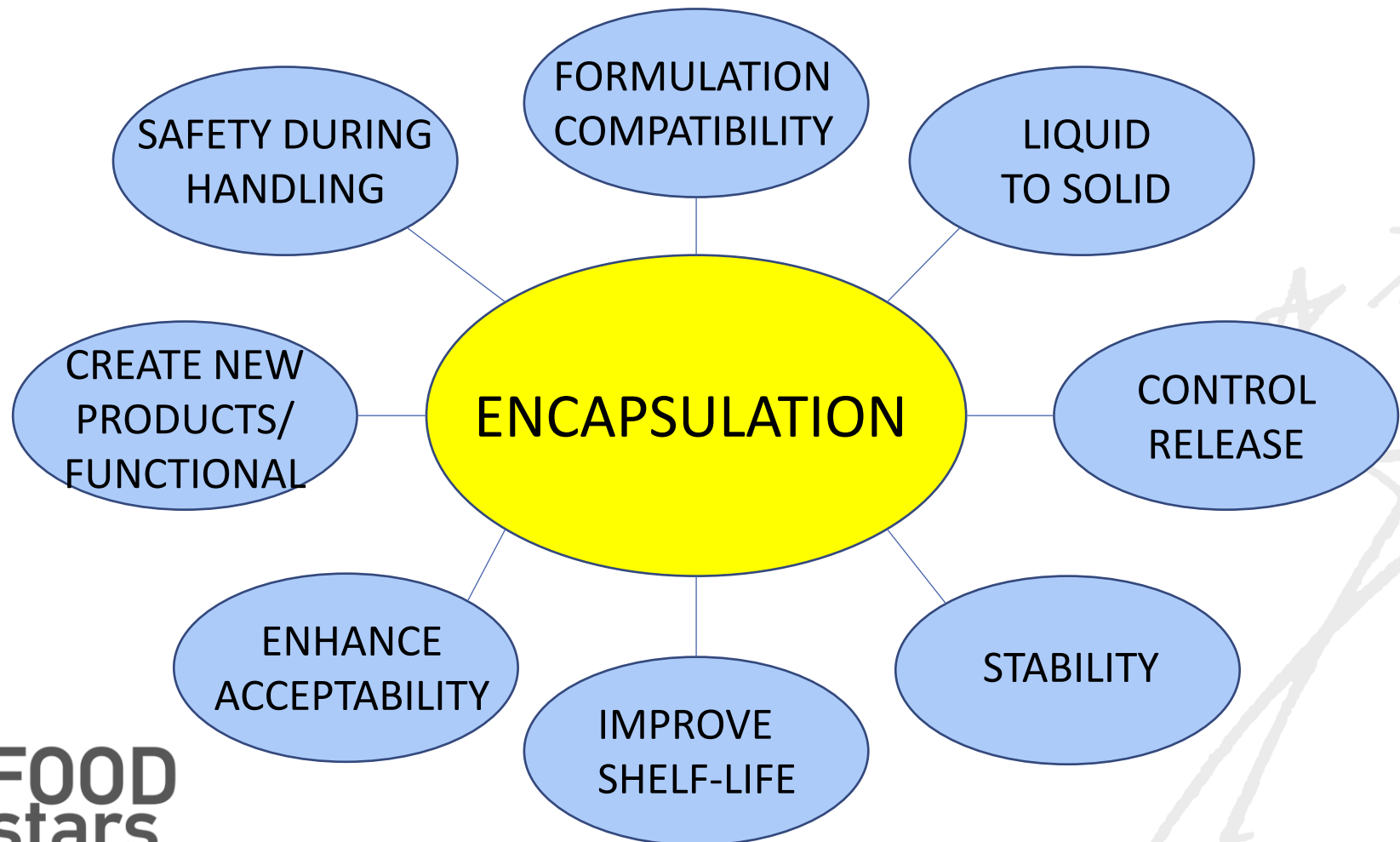
- Encapsulation is a process to entrap active agents within a carrier material mainly to improve shelf-life, stability and delivery of bioactive molecules;
- Wide industrial application: foods, pharmaceutical and cosmetic industries, herbicides, pesticides, living cells, household cleaning products, and others;
- Encapsulation methods may vary depending on the product application.

ENCAPSULATION MATRIX

ACTIVE INGREDIENTS



Why encapsulate???



Example: Fish oil (food supplement)

- Fish oil composition: omega-3 fatty acids – eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA);
- Health benefits: EPA and DHA are precursors of certain eicosanoids that reduce inflammation , reduces triglyceride level, prevents hypertension, etc.;
- Addition to foods: fishy taste and smell

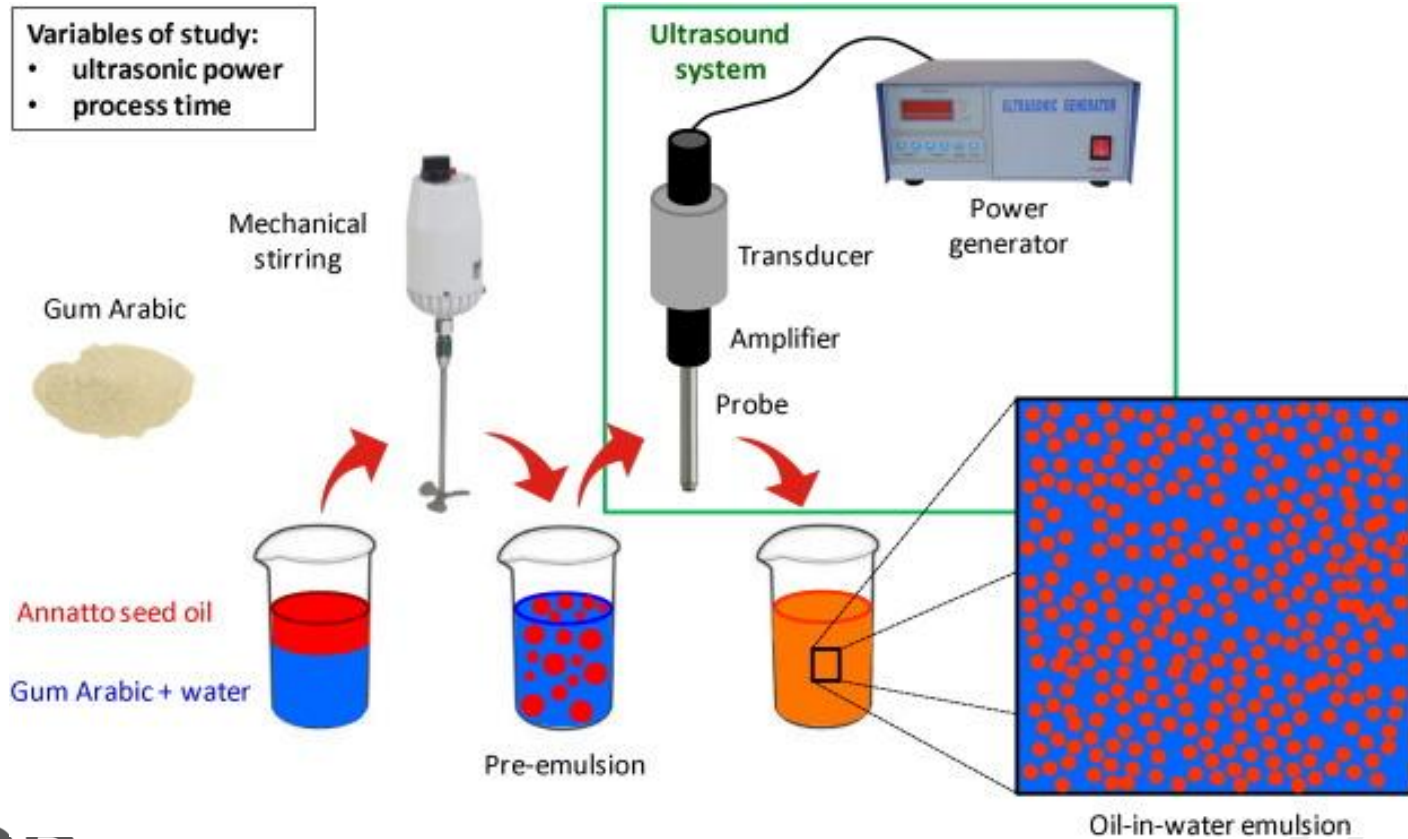
Solution = ENCAPSULATION!!!

The protective barrier slows down the escape of volatile compounds in the fish oil droplets, cause of the unpleasant taste and smell. Microencapsulation also prevents from oxidation.

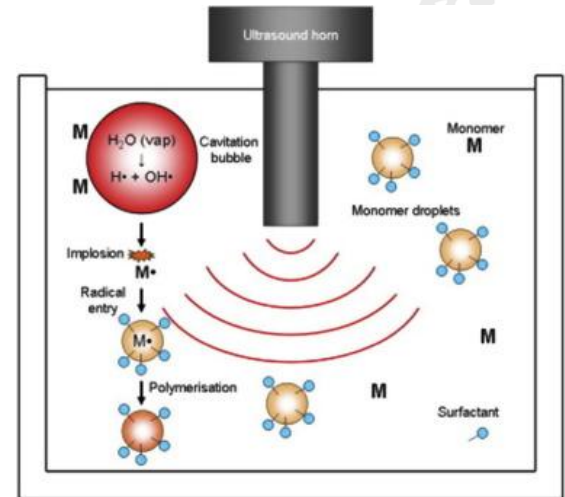
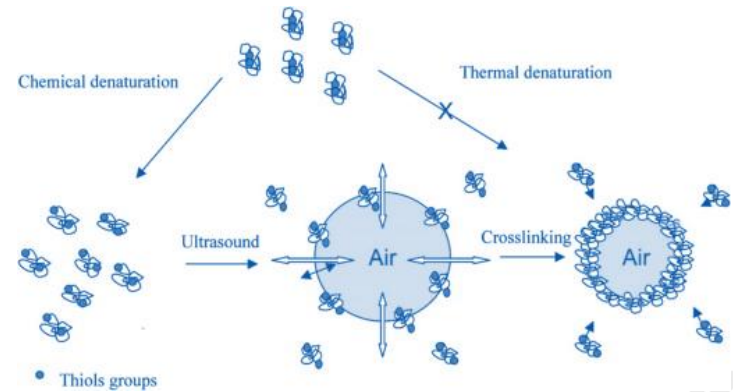
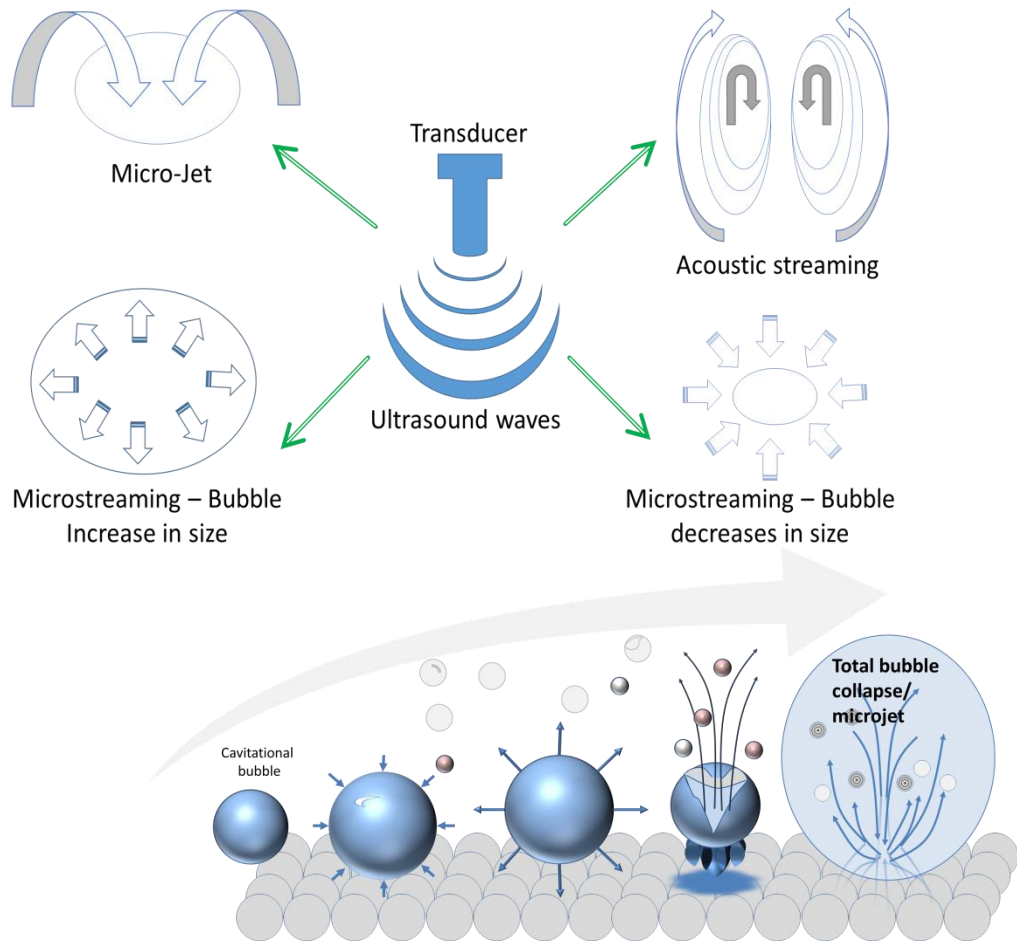


Video: <http://biotechlearn.org.nz>

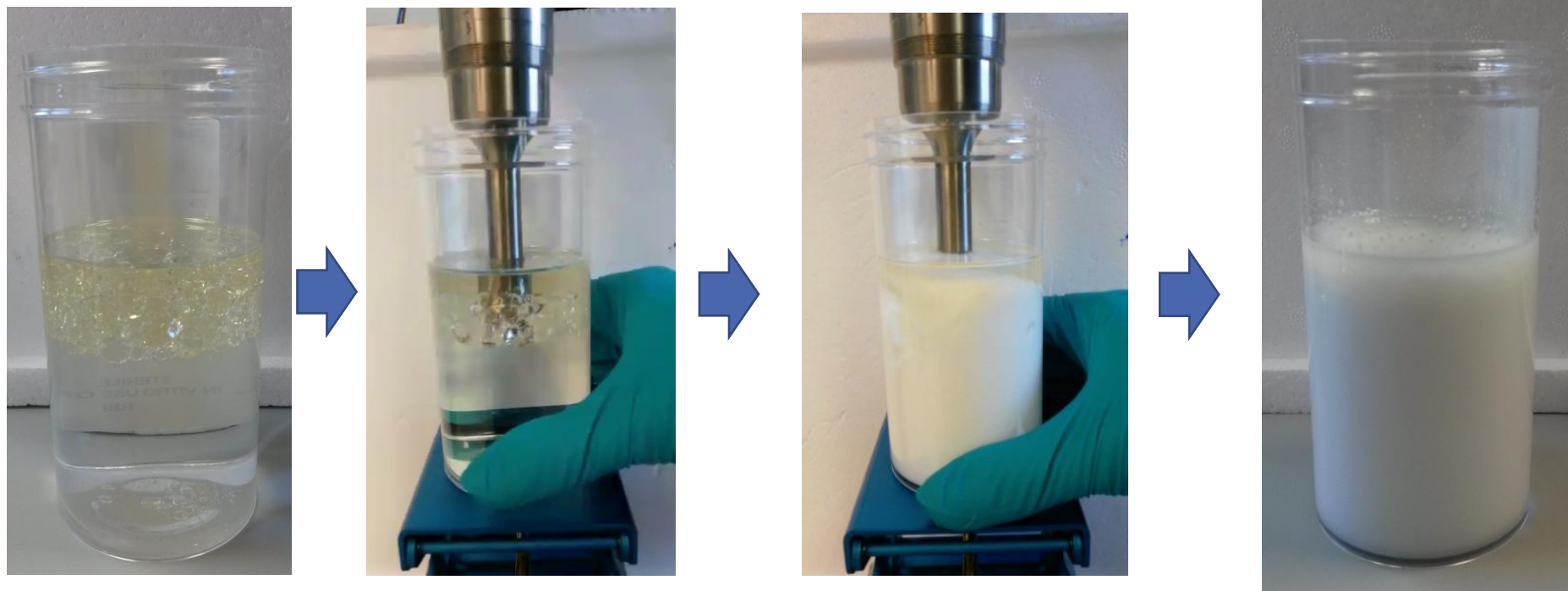
Ultrasound for encapsulation

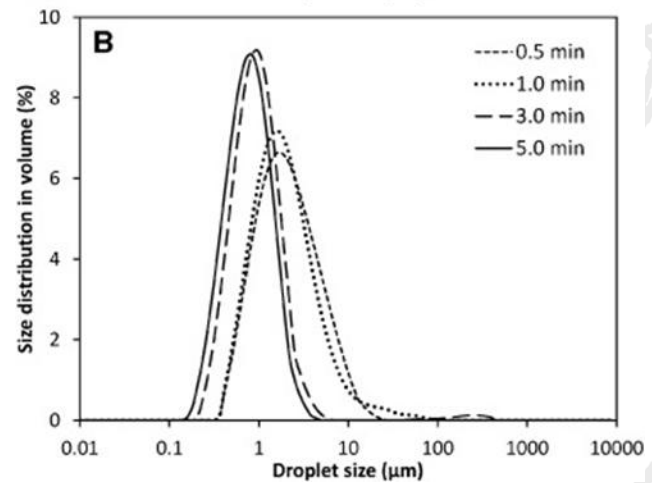
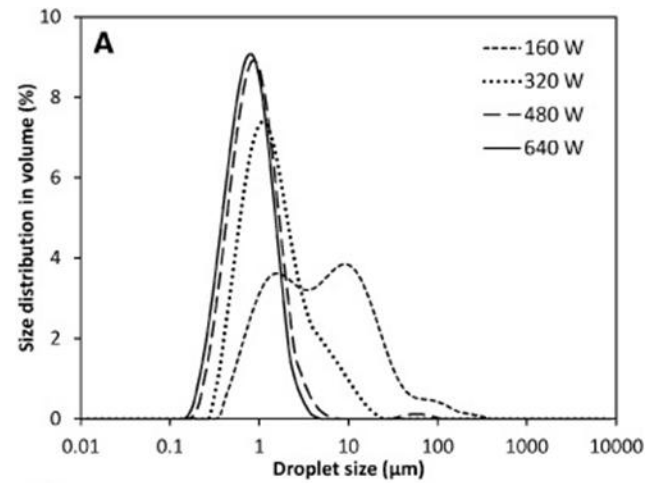
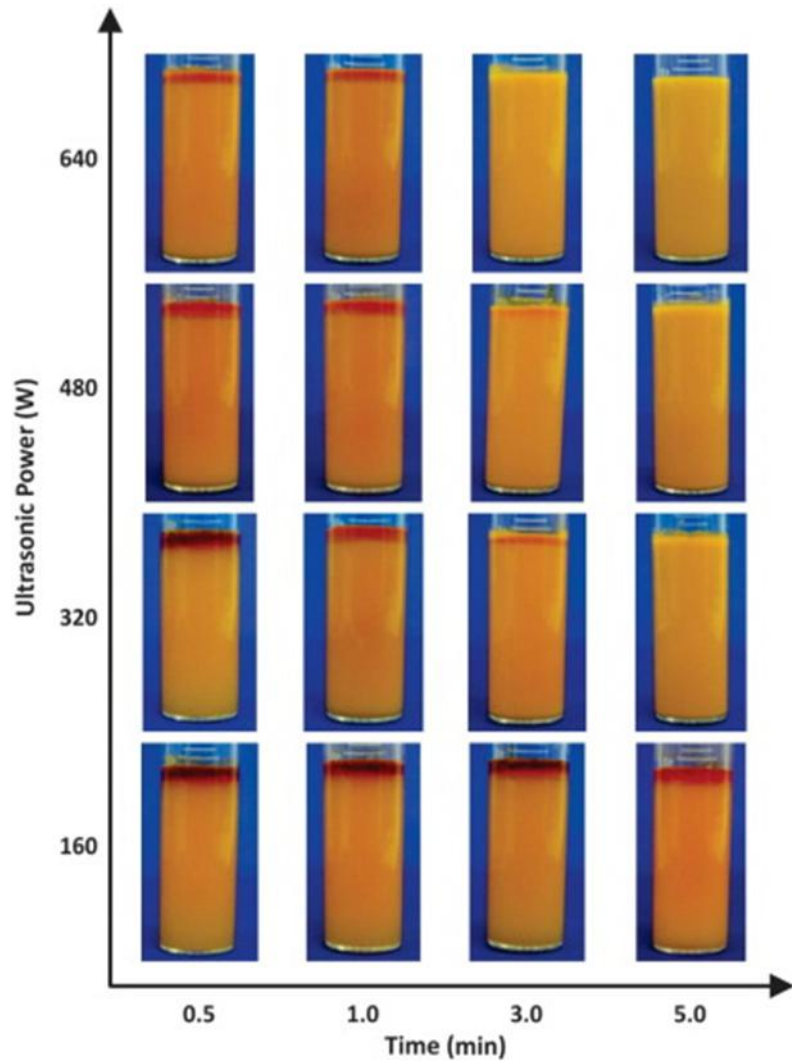


Key mechanisms



Encapsulation





DISCLAIMER:

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This presentation reflects only the opinion of authors and not the opinion of European Commission.



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