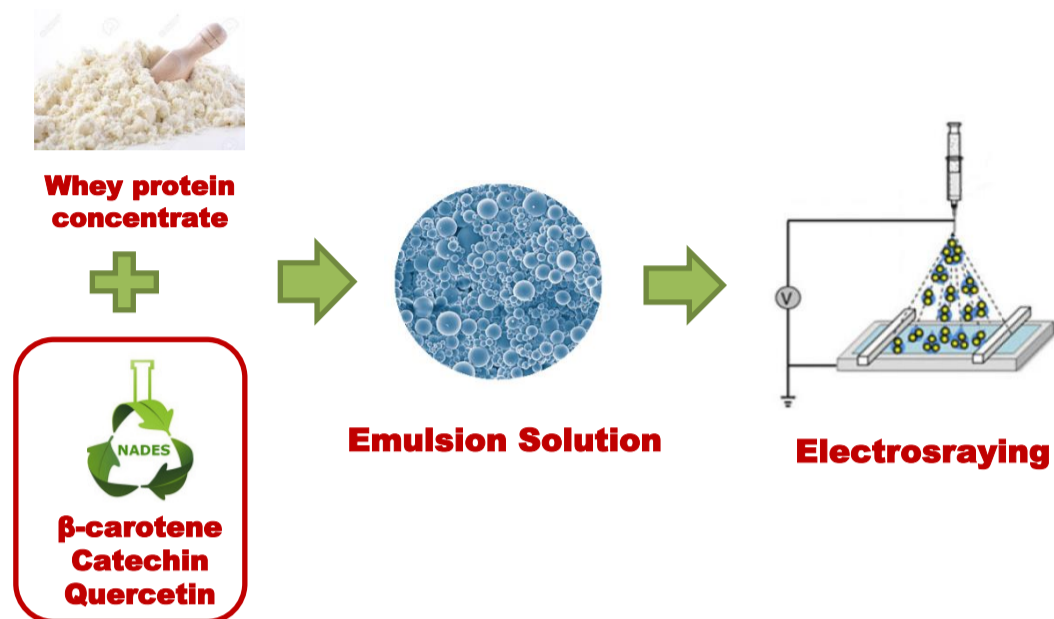


Microencapsulation of Bioactives by Emulsion Electrospaying Using Natural Deep Eutectic Solvents

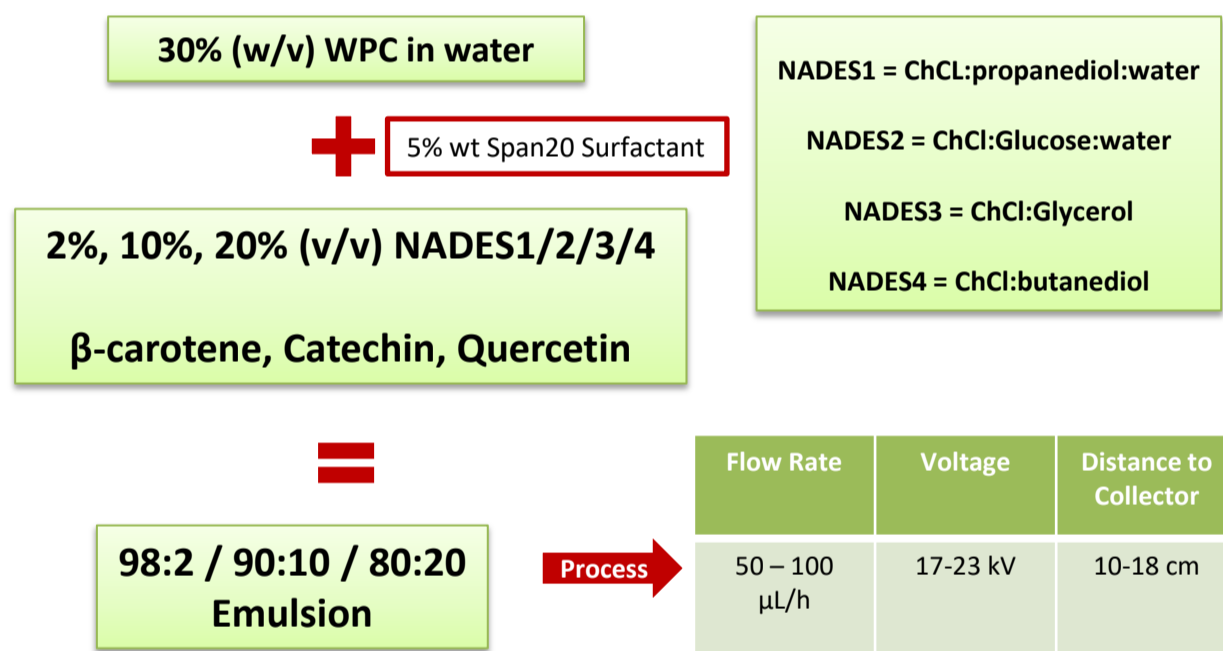
A.O. Basar¹, C. Prieto², E. Durand², H. Sasmazel¹ and J.M. Lagaron². 1. Atilim University, 2. IATA-CSIC

Email: lagaron@iata.csic.es

Introduction



Material Fabrication



Results

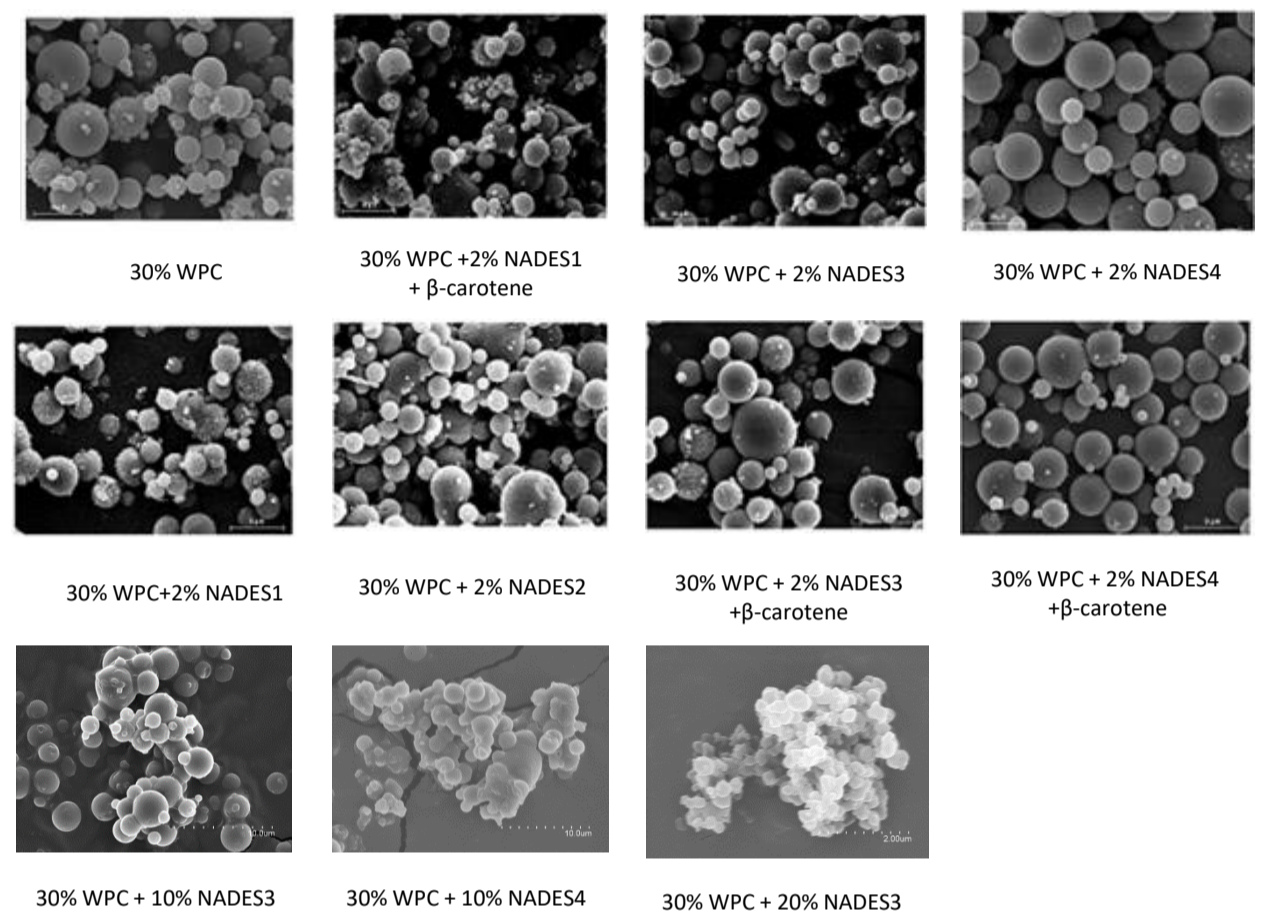
Loading Capacities

Bioactive	Loading Capacity (%)
β-carotene (in NADES1)	1.67 x 10 ⁻³
β-carotene (in NADES2)	0.0667 x 10 ⁻³
β-carotene (in NADES3)	0.667 x 10 ⁻³
β-carotene (in NADES4)	6.67 x 10 ⁻³
Quercetin (for all NADES')	33.2 x 10 ⁻³
Catechin (for all NADES')	33.2 x 10 ⁻³
β-carotene (in Lagaron et al. [1])	79.3 x 10 ⁻³

*Loading Capacities were calculated for the concentration of 2% (v/v) NADES' for each emulsion systems.

Results

Morphology



SEM (Hitachi S-4100 electron microscope, Tokyo, Japan)

Emulsion System	Loading Capacity of β-carotene
30% WPC + 10% NADES3	3.7 x 10 ⁻³
30% WPC + 10% NADES4	37 x 10 ⁻³
30% WPC + 20% NADES3	8.3 x 10 ⁻³

Conclusions

Microcapsules encapsulating bioactives can be produced by emulsion electrospaying using NADES.

Higher loading capacity of β-carotene can be obtained using 'green solvent' NADES for potential food applications.

This opens new opportunities for the application of these solvents in combination with electrospaying technology for the production of new delivery systems suitable for the food industry.