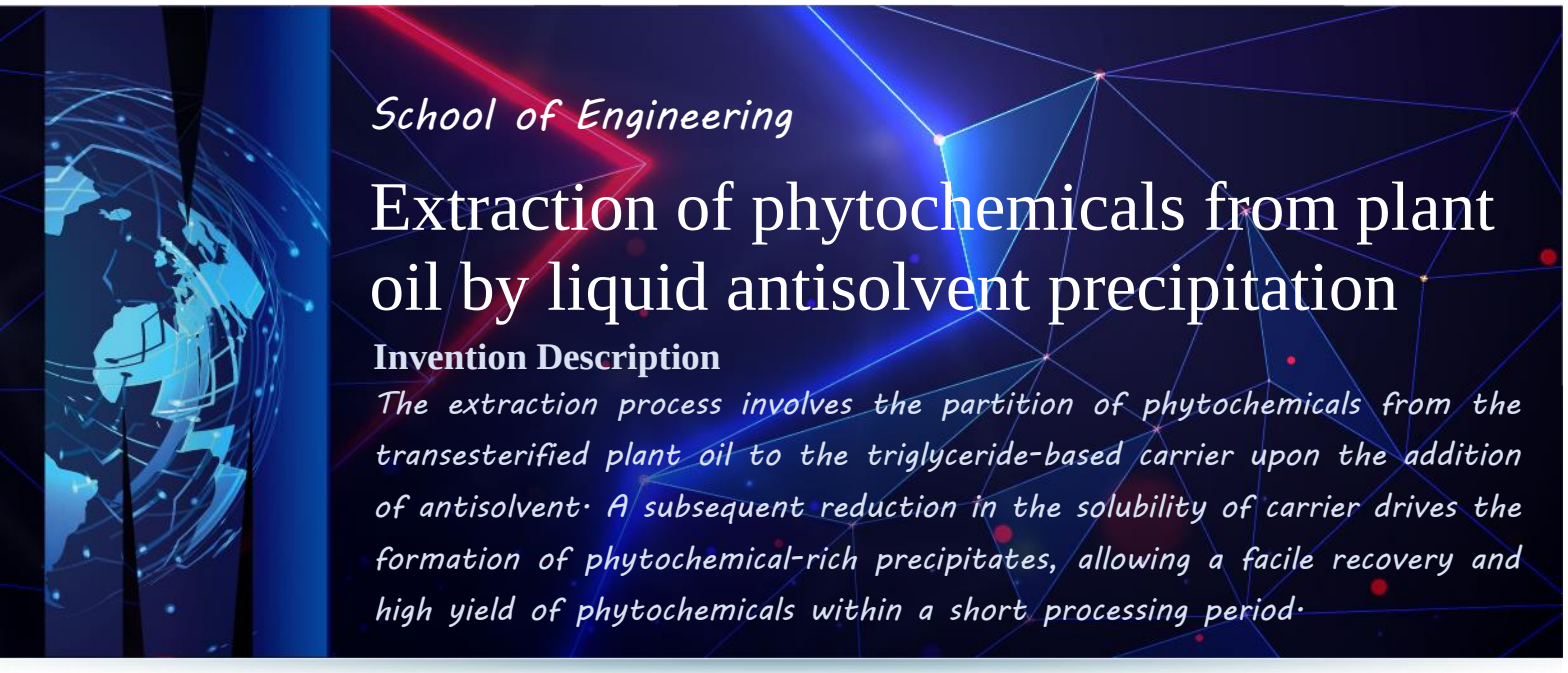
MONASH University

MALAYSIA



School of Engineering

Extraction of phytochemicals from plant oil by liquid antisolvent precipitation

Invention Description

The extraction process involves the partition of phytochemicals from the transesterified plant oil to the triglyceride-based carrier upon the addition of antisolvent. A subsequent reduction in the solubility of carrier drives the formation of phytochemical-rich precipitates, allowing a facile recovery and high yield of phytochemicals within a short processing period.

Key Features

- Overcomes the challenges of extracting valuable phytochemicals from plant oil caused by the high miscibility of phytochemicals in the hydrophobic oil medium
- Exploits the solubility of phytochemicals in the molten stearin carrier by manipulating the hydrophobicity of bulk medium with antisolvent
- Precipitation of carrier is induced by a change in temperature, and the phytochemicals concentrated in the precipitated can be recovered by a simple solid-liquid separation
- Proven effective in extraction of carotenoid from palm oil and its derivatives

Advantages

- Operates under mild operating pressure and temperature conditions
- Up to 90% of palm carotene in single batch; > 15000 ppm of carotene after multi-stage processing
- Phytochemical-rich product in either solid or liquid form

Market Applications

Food, supplement, feed, cosmetics, pharmaceutical, and edible oil Industries

Malaysian Patent Pending No. PI: 2021003449.
Currently seeking commercial partner for licensing.

Contact us

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