NEW COMPOSITION TO DRASTICALLY REDUCE TOXIC COMPOUNDS IN TOBACCO SMOKE

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ABSTRACT

The Polymer Processing and Pyrolysis research group at the University of Alicante has developed a synergistic mixture of tobacco and additives based on mesoporous compounds and alkaline or alkaline earth metal salts of carboxylic acid, which significantly reduces toxic and carcinogenic substances present in tobacco smoke, among them: 90% of tar, 70% of nicotine and 50% of carbon monoxide, among others. This new composition is stable and allows much greater reductions than those currently achieved with other similar systems. This mixture can be manufactured at industrial level automatically using the same conventional equipment (without significant modifications), on any type of tobacco: conventional, reconstituted, expanded, rolling and pipe. We are looking for companies interested in acquiring this technology for commercial exploitation.

TECHNOLOGY ADVANTAGES AND INNOVATIVE ASPECTS

The present invention has the following advantages:

1) The mixture object of the present invention has a surprising synergistic effect, obtaining excellent results in the reduction of toxic and carcinogenic compounds during the tobacco smoking process, much higher than those reached by other catalysts described at the present time.

2) The wetting and adherent effect of the alkaline or alkaline earth metal salt of carboxylic acid made the mixture of tobacco with the mesoporous compound more effective, resulting in a more stable final product.

3) The process of incorporating the catalyst on the tobacco is greatly simplified, allowing automated industrial scaling using conventional equipment without any significant modification.

4) The dispersion of the catalyst on the tobacco is improved.

5) The stability of the mixture [tobacco + catalyst] is increased.

6) It increases the effectiveness of the catalyst in the reduction of harmful compounds present in tobacco smoke.

INNOVATIVE ASPECTS OF THE TECHNOLOGY

The simultaneous and combined addition of mesoporous solids (type SBA-15, MCM-41 and activated carbons) with alkaline or alkaline earth metal salts of carboxylic acid on tobacco, has a surprising synergistic effect with excellent results in the reduction of toxic and carcinogenic compounds present in tobacco smoke, which was not foreseeable with respect to their addition separately.

It is worth noting the **reduction of the following compounds**:

- Tars: 90%
- Nicotine: 70%
- Carbon monoxide (CO): 50%
- Other gases: 50%
- Condensed liquids: 100%

MARKET APPLICATIONS

This invention is framed within the **tobacco sector** (**cigarette** manufacturing), in particular, preparation of a synergistic mixture of tobacco and additives (mesoporous compounds and salts of alkaline metals or alkaline earth salts of carboxylic acid), which significantly reduces the toxic and carcinogenic substances present in tobacco smoke.

This technology can be applied, both **manually** and **automatically** to:

- Conventional tobacco.
- Reconstituted tobacco.
- Expanded tobacco.
- Rolling tobacco.
- Tobacco of pipe.
- Tobacco mixtures.

COLLABORATION SOUGHT

We are looking for companies interested in acquiring this technology for commercial exploitation through:

- Patent licensing agreements.
- Development of new applications.
- Agreements regarding technology and knowledge transfer.

Company profile sought:

Manufacturers and/or sellers of:

- Conventional tobacco.
- Reconstituted tobacco.
- Expanded tobacco.
- Rolling tobacco.

- Tobacco of pipe.
- Tobacco mixtures.
- Cigarettes.
- Cigars.