

RECYCLING CIGARETTE BUTTS TO PRODUCE PAPER IN MEXICO

The [company Ecofilter](#) created in Mexico an innovative biotechnological process that allows to produce paper recycling cigarette butts. The new material also has thermal and insulating properties, so that it can be used to manufacture covers, soles, thermal and acoustic insulators, among other products.



In February 2018 Ecofilter won the UNITEC Award *Technological Innovation for Social Development* of Mexico and the recognition renewed the country interest in the innovative business of the Ecofilter enterprise, for the great advantages it brings to the environment, to nature and to the economy.



The Journal of the [Universidad Nacional Autonoma de México UNAM](#) summarizes the history of the innovative biotechnological process, started in 2012 by Leopoldo Benítez González in the *Facultad de Estudios Superiores (FES) Iztacala* of UNAM with his thesis to obtain a degree in biology. The article also presents a panel that summarizes the great advantages of this innovation for the environment and the adopted method.



The biotechnological process induces the corrosion and detoxification of the cellulose acetate (cotton that makes up cigarette butts) by the use of a microorganism, to obtain the cellulose used in the paper's production. The microorganism is a fungus that grows on the trees and deteriorates the wood, because it generates a complex of enzymes capable of degrading cellulose.



To develop the great potentialities of this innovation, and with the collaboration of other professionals from the Technological University of Mexico (UNITEC), the author created the Ecofilter company to produce different goods with the pulp extracted by the cigarettes' butts.

The process used by Ecofilter follows the steps taken in the experimentation of the thesis, providing the fungus with controlled growing conditions, inside jars where butts and water are placed. The result is the growth of basidiomycetes that in a biotechnological process taking between 10 and 15 days, allows to extract the toxic substances and degrade the butts. 75% of the material



obtained turns out to be a compost able to replace the pulp of cellulose used from the timber cut to make paper.

Besides the award received by UNITEC in 2018, Ecofilter was also shortlisted by Cleantech Challenge among the 40 best green enterprises of México in 2017. It was also recognized for her *Environmental Leadership among the Companies* by the Federal Government Institution for Environmental Protection of Mexico.

The Awards recognized Ecofilter for its contribution to the environment and the economy. This innovative production process helps save the trees. According to data presented by the company, 50 billion cigarette butts are discarded in Mexico every year. Of this total waste, 41% end up in landfills, generating costs for their disposal and the remaining 59% end up contaminating the ecosystems. Butts take 12 years to degrade and contaminate water and soil with their toxic substances. At the same time, the recycling activity can contribute to create a production of cellulose pulp in Mexico, avoiding its importation from abroad, generating jobs and lowering the prices of paper and its industrial products of popular use.

In its current phase of work, Ecofilter manages to collect cigarette butts in bars, restaurants and organizing specific initiatives for recollection. Paper products produced by Ecofilter are sold in eco-friendly shops.

The company Ecofilter estimates to have the capacity to recycle two million 400 thousand cigar butts per year and its main challenge is to create an effective collection system for cigarette butts, also using specific waste containers.

To know more

[Ecofilter in Facebook](#)

[Article in gaceza.unam.mx](#)

[Article in dgcs.unam.mx](#)

[Ecofilter ein Youtube](#)

[Video Award UNITEC in Facebook](#)

[Blogs.unitec.mx](#)

[Article in foroambiental.com.mx](#)

[Article in aristeguinoticias.com](#)

[Article in kioscomayor.com](#)

Alquimia ecológica: transforman colillas en papel

Salva **14 árboles** por cada tonelada de colillas de cigarro procesadas.

Colillas:
Contaminan suelos y agua.
Contribuyen a bloquear el drenaje.
Tardan 12 años en degradarse.

¿Sabías que...?
Sólo en México se desechan **50 mil millones** de colillas por año.
Una colilla contamina 50 litros de agua por los contaminantes que retiene.
Se colectan cerca de 15 kg de colillas por semana.
Se buscan nuevas aplicaciones porque el material procesado también tiene propiedades térmicas y aislantes.

Procedimiento:

- 1 Se muele la colilla con agua (1 ml x colilla). Un litro = mil colillas.
- 2 Se coloca en frascos con hongos basidiomicetos que deterioran la colilla.
- 3 25 % se degrada y se vuelve composta.
- 4 El 75 % restante se convierte en material similar a la pulpa de celulosa para elaborar papel.

GAZETA UNAM | Diseño: Alhell Rivera.

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