BIOVINYL RECORD

KEYWORDS

- ❑ BIOMATERIAL
- ❑ SUSTAINABILITY
- ❑ BIOFABRICATION
- ❑ VINYLRECORDS
- ❑ BIOPLASTIC

AREA

- ❑ ARCHITECTURE DESIGN & CULTURAL HERITAGE

Priority Number
n. 102022000010328_18.05.2022

Patent Type
Patent for invention

Ownership
Sapienza University of Rome 100%.

Inventors
Sabrina Lucibello, Giovanni Inglese

Industrial & Commercial Reference
The invention is an advantageous alternative in terms of time, cost and sustainability for the vinyl record industries.

Time to Market
The invention is at TRL 4 state, prototypes have been made and tested on common turntables, improvements must be made in coupling with the support layer.

Availability
Cession, Research, Development, Experimentation and Collaboration.

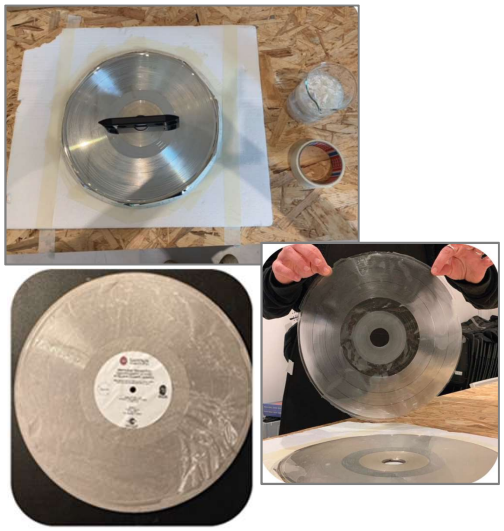
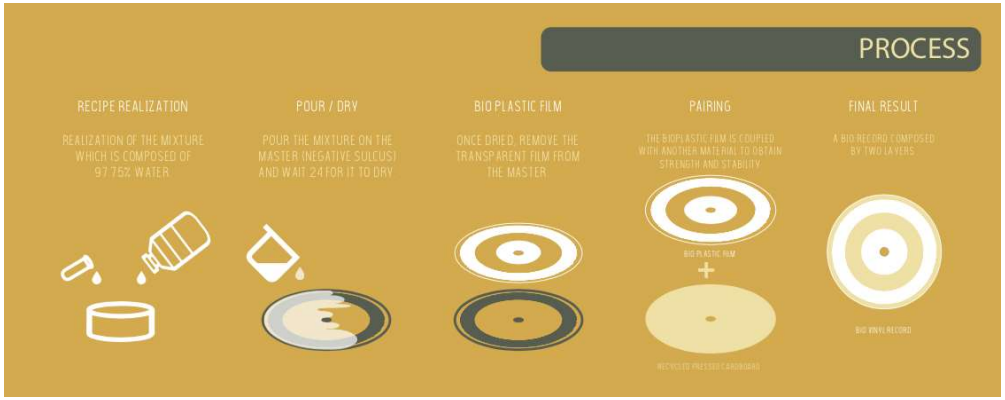


Fig. 1 Photographic representations of some steps of the procedure according to the form of realization schematized.

Fig. 2 Schematic representation of a process according to a form of realization of the present invention.

Abstract
The renewed success of vinyl has not been accompanied by a virtuous process of innovation: production processes are obsolete, polluting, with a significant environmental and energy impact. The present invention, which uses "negative" matrices currently in use in the industry, provides an original and innovative process for the preparation of phonographic discs that allows to obtain media reproducible with conventional turntables. The particularly advantageous process allows to exploit part of the existing technology (without causing further negative impacts on the environment)reduces energy impact and provides discs that do not require the use of plastics or other materials that are harmful to the environment and the ecosystem.



CONTACTS

- ➢ PHONE NUMBERS
+39.06.49910888
+39.06.49910855
- ➢ EMAIL
u_brevetti@uniroma1.it

SAPIENZA UNIVERSITÀ DI ROMA

ASuRTT _ UFFICIO VALORIZZAZIONE E TRASFERIMENTO TECNOLOGICO
SETTORE BREVETTI E TRASFERIMENTO TECNOLOGICO
- ➢ http://uniroma1.it/ricerca/brevetti

BIOVINYL RECORD

Technical Description

The process eliminates the use of PVC and draws from renewable sources, such as biomass, in particular with a composition composed of 97.5% of water and the remaining gelling agent of natural origin. Unlike common printing processes, generally including hot stamping by means of a hydraulic press, the process developed by the authors provides for the simple cold casting of the composition above a common molding matrix used for the production of phonographic discs, such as a "master" or "Stamper" metallic: the layer formed by pouring the composition onto the surface of the moulding matrix is allowed to solidify and is finally simply removed from the matrix and applied to a support element, resulting in cost and energy savings.

Fig. 3 Phonographic disc being reproduced, obtained by a procedure according to the schematized form of realization in Figure 1.

Technologies & Advantages

In a context in which raw materials (plastic) and energy are constantly increasing, biovinyl (97.5% water) in addition to being cheaper reduces CO2 emissions, an important environmental and energy advantage.

The phonographic film having the same characteristics for the reproduction of sound tracks (groove resulting from printing on negative) can be conjugated with an appropriate supporting element (e.g. recycled cardboard) which constitutes the soul of the phonographic disc and, at the same time acts as a label, offering additional cost and material savings.

The process does not require the use of hydraulic presses has a saving in energy terms (since the cold casting material) and does not compete with the productions that provide the use of the latter, representing an additional possibility, parallel, for the production of small runs, which are however of great importance both in economic and cultural terms.

The invention is compatible with the development of Vinyl HD, which involves the production of "Stamper" by laser engraving of ceramic plates, with a greater reduction in energy and pollution than traditional methods.

Applications

This invention refers to a new process for the production of a phonographic disc for the storage, recording and/or analogue reproduction of a sound content, as well as to a phonographic disc obtainable by means of this procedure and is applicable within the industries involved in the production of this type of disc.

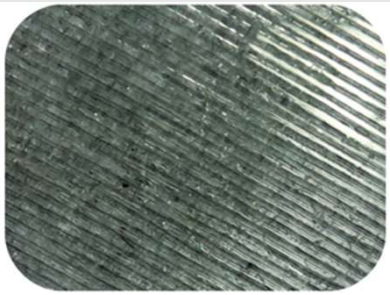
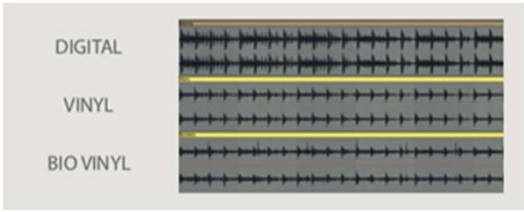


Fig. 4 Magnification under the optical microscope of the grooves present on the face of a phonographic disc obtained by means of a form of realization of the procedure according to the invention.

Fig. 5 Comparison between the same sound waveform in digital (top panel), engraved on a common vinyl disc (center panel), or printed on a phonographic disc obtained by a procedure according to the present invention (bottom panel).



CONTACTS

- PHONE NUMBERS
+39.06.49910888
+39.06.49910855

- EMAIL
u_brevetti@uniroma1.it