3D PRINTING IN MUSIC

2025

HOW IS 3D PRINTING USED IN THE WORLD OF MUSIC?



Musical instruments

With 3D technologies, customized and unique musical instruments can be manufactured, offering artists and musicians the opportunity to create products with unique physical and acoustic characteristics.



More sustainable materials

3D printing enables the production of musical instruments, vinyl records and other musical products using more sustainable materials and reducing dependence on plastic.



Accessibility

Musical instruments made with 3D technologies make music more accessible to musicians and students. This is a significant advantage for people with limited financial resources or for those who require instruments adapted to a disability.



Historical instruments

Additive manufacturing is used in museums and cultural institutions to replicate historical instruments of great musicians and make them available to the public.



Design freedom

Some musicians claim that this technology allows for freer, more preciseand less bulky designs and, therefore, higher quality instruments.



New frontiers

Thanks to 3D printing, it is possible to create new hybrid musical instruments that combine elements of different existing ones. This combination can lead to new ways of creating music.

3D PRINTED MUSICAL INSTRUMENTS AND ACCESSORIES

MIDI CONTROLLER

Suitable for any type of synthesizer pad, the Zortrax MIDI controller functions as a drum machine, sequencer or track launcher. It is made of Z-ULTRA material on the Zortrax M200 printer.



MOUTHPIECES

Syos Mouthpieces manufactures mouthpieces for saxophone and clarinet with optimized internal geometries that improve acoustics. The mouthpieces are manufactured with SCAL3D, a Syospatented material specifically for 3D printing.

DRUMS

Open E-Drums is an open-source electronic drum kit based on Arduino. Its manufacture combines 3D printing, cutting and CAD design. Both pads and MIDI converters can be printed.





SAXOPHONE

The Travel Sax, created by Odisei Music, is a 3D printed electric saxophone made with HP's Jet Fusion technology. It is lightweight and can be connected to a smartphone or PC to practice anywhere.



ELECTRIC GUITAR

The GreenAxe, designed by engineer Olaf Diegel, is an electric guitar 3D printed with binder jetting, using wood sawdust and bio-epoxy. Its body features a distinct lattice pattern that, in addition to lightness, gives it a unique aesthetic.



KEY FIGURES

33.000 £

London's Royal College of Music Museum project grant for 3D printing replicas of historical instruments to improve teaching and performance for

young musicians, as well as public accessibility.

(ROYAL COLLEGE OF MUSIC)

The number of 3D printed sculptures for the Frozen Music project, each one inspired by a different piece of classical music, representing the physical dimension of sound.





The production time of MyCello, a 3D printed violoncello, compared to the roughly 6 months required with traditional production methods.

50%

Reduction of waste materials in additive manufacturing of TitanIEM earphones by BLT and Earfit.





TIMELINE

2012		French engineer and musician Laurent Bernadac creates the 3Dvarius, the first electric violin completely 3D printed by stereolithography.
2014		The first concert with fully 3D printed instruments takes place at Lund University, featuring the designs of professor and pioneer of 3D printing in music, Olaf Diegel.
2015	•	Students at the University of Wisconsin create the Tactile Stave Notation system, SLS printouts of sheet music with raised notes so that visually impaired musicians can feel the music with their fingers.
2016		MONAD Studio, makers of futuristic-looking 3D printed instruments and the iconic Lucid EXO grand piano, is founded.
2018		OpenFab PDX launches Modular Fiddle, an extensive platform of customizable, 3D printable stringed instruments.
2019		Swedish company Sandvik combines L-PBF technology and machining to create an unbreakable electric guitar. The body of the guitar was printed in titanium and overcame attempts by guitarist Yngwie Malsteen to break it on stage.
2022		Online music school AVIVA Young Artists Program turns to 3D printing to make PLA violins and break the price barrier when purchasing a first violin.
2023		The Paganini Prize celebrates its 70th anniversary by creating a 3D replica of Niccolò Paganini's Guarneri del Gesù violin in collaboration with the company 3DiTALY.
2024		Engineer and musician Oliver Deeg uses BigRep's large-format solutions to manufacture a drum kit that requires no post-processing and has great sound quality.
2025		Sicnova and the Conservatorio Superior de Música de Jaén join forces to integrate computer-aided design and additive manufacturing for wind instrument training and study.

