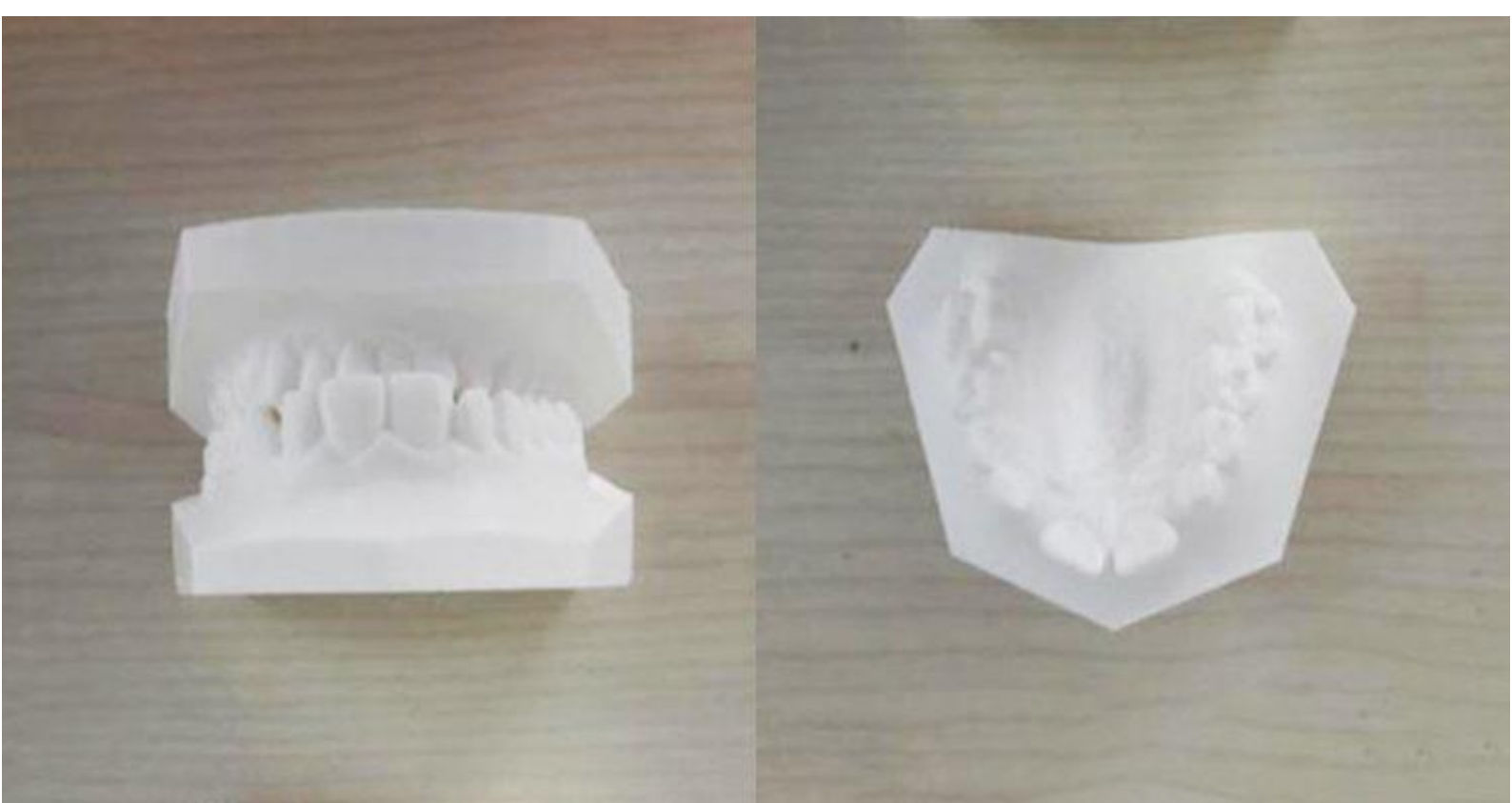# 3D Printing in Medicine: The Use Of 3D Printers in Orthodontic Models

![RAISE3D logo]

How 3D Printing is Transforming Orthodontics Laboratoire Ortho34

Frédéric Lapeyre, the founder of Laboratoire Ortho 34, is an innovator when it comes to orthodontics. Based in France, this lab is equipped with a Raise3D printer to aid with their wide range of applications in the dental field.

Traditional dental casts require the creation of a mold within the patient's mouth. This process is typically very messy, costly, and lengthy. However, for Labratiore Ortho 34 using a Raise3D printer, has made possible for them to create and offer unique 3D dental prints in plastic materials as opposed to using traditionally plaster-casted dental impressions. The results are the production of amazing dental pieces with an accurate and high-quality vibrant and white finish.
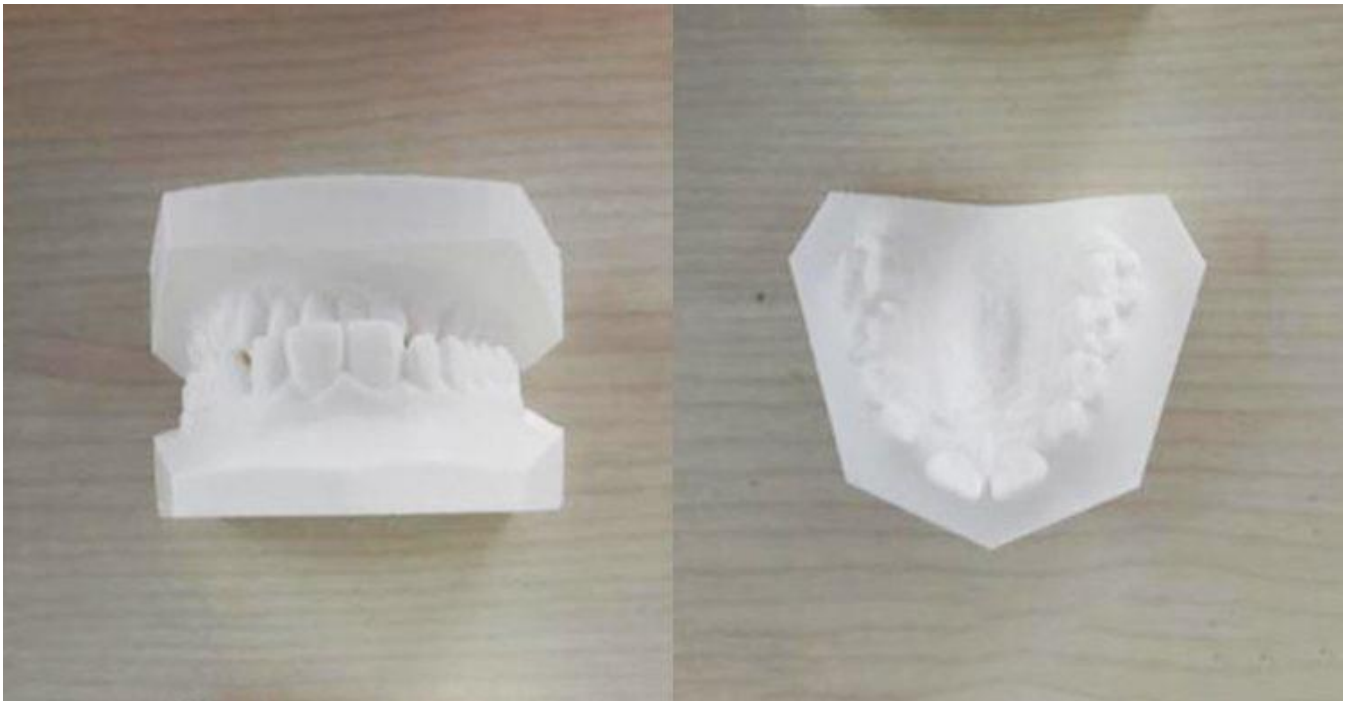

"There was a learning curve as I never used a 3D printer before. But I can say now, that as of today, the results are accurate and reliable. I'm really happy with my RAISE3D N1 and N2 because the size of the build volume is perfect for the dental prints I'm creating. I also love the double extrusion possibility and the quality of the RAISE3D filament I'm using – easy to print and with a great finish."
– **Frédéric Lapeyre, Founder of Laboratoire Ortho 34**

By implementing the use of Raise3D printers, and ideaMaker slicing software this lab was able to produce high-quality 3D printed dental models resulting in:

1. Incomparable accuracy of dental pieces by using digitally scanned data.
2. The elimination of long-time manufacturing processes due to the power of this 3D printer running 24/7.
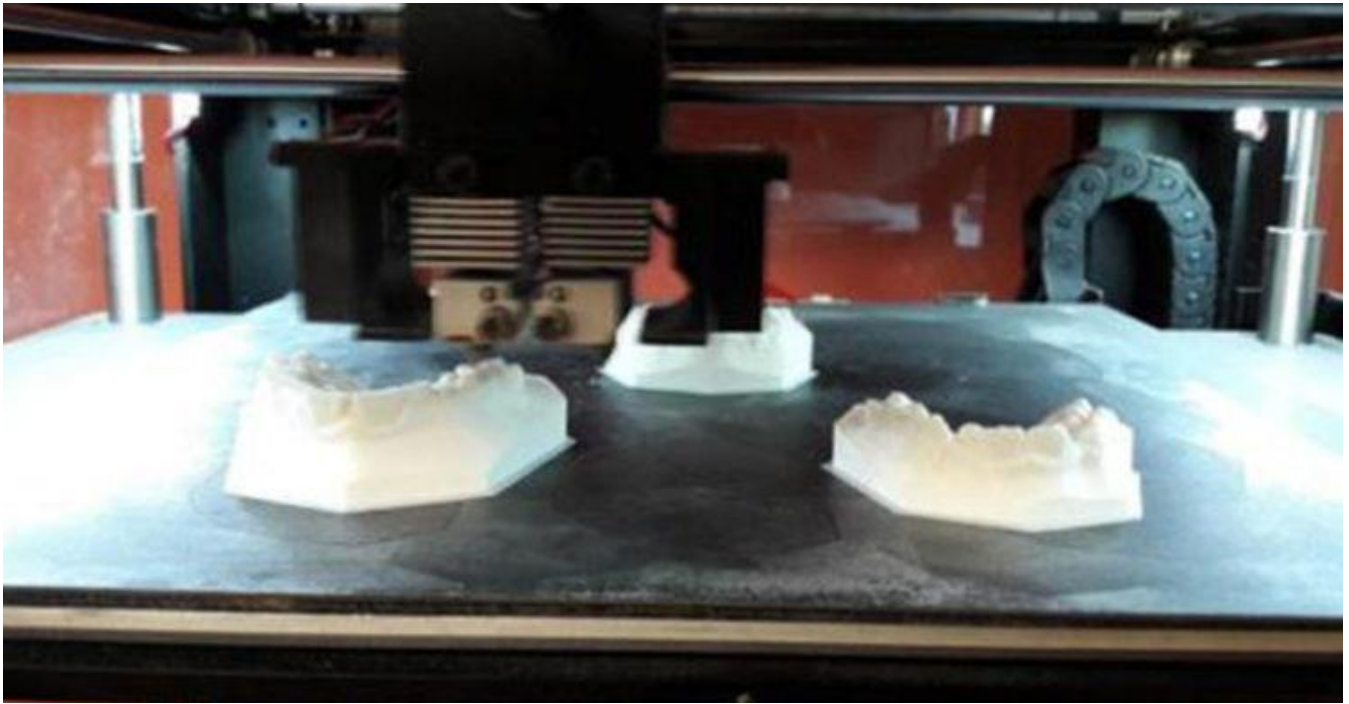
How 3D Printing is Applied in Orthodontics

For Laboratoire Ortho 34, orthodontists send Laboratoire a 3D file obtained with an intraoral scan that captures optical impressions directly from the patient presented as "virtual" models. These STL files are then created using Raise3Ds ideaMaker slicing software for setup with the printers. The finished prints are then sent back to the orthodontist.

3D Printing VS Traditional Dental Modeling

The traditional dental process involves first creating a mold of the patient's mouth. With the use of alginate, a rubber-like mold making material, a negative mold is made to capture the details of the teeth. After setting, this material hardens and can be removed from the mouth. Investment, a plaster-like material, is then poured into these molds to create a positive model of the teeth.

This process is very complex for both the dentist and the patient. The materials used make this process both messy and expensive. Additionally, creating the negatives, allowing the materials to harden, and cleaning the plaster models makes this a lengthy process.

"I can say I'm glad with the purchase I made for my two RAISE3D printers."

– **Frédéric Lapeyre, Founder of Laboratoire Ortho 34**

3D Printing, an Innovative Solution Dental Model Printing

By adopting 3D dental model printing, the process is significantly less difficult for the patient and the orthodontist, overall creating a more pleasant experience and saving the manufacturing time required to create dental models. While the traditional process involved a lot of hands-on time for the dentist, Raise3D printers are able to run autonomously and can continue to produce overnight without supervision, even remotely.

Additionally, a remarkable part is that errors due to imperfections in the molding process are 100% eliminated thanks to the accuracy and precision of this highly reliable 3D printer and the 3D scanned data.

Connect with Raise3D

Do you have a great 3D printing success story and think it would be cool to be featured on www.raise3d.com, we would love to learn more! Write to us at inquiry@raise3d.com

For more information about Raise3D printers and services, browse our website, or schedule a demo with one of our 3D printing experts.