



Digital Dentistry

NIMRODENTAL TRANSFORMS THE WAY IT PRACTICES ORTHODONTICS
WITH 3D PRINTING

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in this market.”

– Nimrod Tal, NimroDENTAL

CASE STUDY



NimroDENTAL required reliable 3D printing technology to produce top-quality models.

From its founding in 1991, NimroDENTAL Orthodontic Solutions set out to deliver top-quality laboratory services to dentists in the London area. As the company expanded to meet growing demand, faster turnaround times, increased accuracy and more complex dental models became the new norm as both the market and available technologies developed.

To address the new requirements and increase productivity, NimroDENTAL purchased an Objet Eden500V™ 3D Printer in 2011, and later an Objet260 Connex3™ system, says Nimrod Tal, founder and managing director of NimroDENTAL. “People come here from all over the world for specialist medical treatment for things like dental procedures. It’s important to deliver what is needed as quickly as possible and Stratasys® has enabled us to meet that requirement.”

"As a whole, people expect more from dentistry today, and the way that dental labs respond has to keep pace with the expectations of the dentists and their patients," adds Tal.

Using transparent and color 3D printing materials, functional models for aligners, crowns, bridges and complex reconstructive orthodontic devices can be produced faster and more precisely than ever before. NimroDENTAL can 3D print up to 20 high-quality ortho-study models on demand in just short period, saving time, lowering costs and reducing the need to store bulky, physical models in the clinic.

Improving Patient Understanding

"The introduction of 3D printing to our operations has revolutionized the way we work," says Hugo Patrao, head of R&D and manager of NimroDENTAL's 3D printing department. "We have a better workflow, higher productivity and can produce products that look more professional. In fact, the benefits of 3D printing go far beyond the models themselves."

Patrao cites several advantages from the dental materials, including a higher level of contrast than the traditional plaster models, which makes it easier for patients to see how the orthodontic device works and looks. "Models with moving parts fit precisely and this helps dentists explain what is being done, and how the final result will function," says Patrao.

"Better communication with patients made possible with 3D printed models has had a real, positive impact on patient satisfaction," adds Tal.

Cleaner, Faster Production

Apart from improved productivity, faster turnaround times and more accurate, detailed models, 3D printing offers dental laboratories and their customers many other advantages.

Patrao comments that the office-friendly printer size makes them cleaner and easier to use than plaster models. "They are also less labor-intensive and we can set them to print overnight, which is an enormous benefit to turnaround times and productivity.

"Our 3D printing technology needs to be reliable," he adds. "The printers are running virtually 24/7, producing models for a range of simple and complex applications. Reliability is a critical factor, and our Stratasys 3D Printers deliver day in, day out."

Improving Market Education

Tal says that while the number of dentists who use 3D scanning and printing is still relatively small, the market is growing. One tactic is to address reasons behind the smaller market, including time to explore it, misperception of costs and failure to understand the benefits. "These are things that our business development activities address."



NimroDENTAL makes functional dental models using its Objet260 Connex3 and Objet Eden500V 3D Printers.



NimroDENTAL can now 3D print ortho-study models much faster than they could make traditional plaster models.

One of the key benefits of dental practices using 3D scanning and 3D printing is the space that it can save. Scans and 3D print files can be saved digitally at multiple locations, and large storage areas for bulky physical models – many of which will never be referred to again – be no longer needed.

“3D printing is the solution to many challenges in this market,” Tal concludes. “The accuracy, speed, cost-effectiveness and improved communications – between us and our customers, and between the dentists and their patients – are the ones with the greatest impact.”

He adds that patient expectations will continue to rise, encouraging more dentists to move into digital dentistry. “The value of understanding what is involved in a procedure and having an accurate picture of the outcome cannot be overestimated, and our Stratasys 3D printers enable those conversations.”