Dental Assessment

数字牙科的核心：48 小时内提供牙体修复
Albensi 牙科实验室的 CEO Don Albensi 揭示了其注册商标 PG-Pro 工作流程，此工作流程揭示了用比以前更低的成本更快地生产牙齿修复体。

At the Heart of Digital Dentistry

Delivering Dental Restorations within 48 Hours

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As the cost of laboratory work is becoming a major factor in dental restoration planning and therapy, and in pricing, some forward-thinking dental labs are adopting digital dentistry processes to set themselves apart. In recent years, dental restorations based on software design have become common and most dental companies now have access to 3D printing, whether in the dental practice or laboratory or via production centers. This opens valuable benefits to dental companies, including: access to new, almost defect-free, industrially prefabricated and controlled materials; higher quality and reproducibility; data storage commensurate with a standardized chain of production; improved precision planning, and efficiency.

Albensi Laboratories is one such dental company that has brought digital dentistry into the heart of its business – and has discovered that in addition to lowering prices, it can provide faster delivery times and maintain its high quality standards.

Located near Pittsburgh, Pennsylvania, the company was one of the early adopters of CAD/CAM design technology for producing dental parts straight from CAD design imagery. Instead of outsourcing production where scanned data is transferred to CNC systems using traditional milling techniques, Albensi Laboratories switched to an in-house 3D printing system.

New Digital Dentistry Workflow: PG-Pro™

As part of its expanded adoption of digital dentistry, Albensi Laboratories has developed and trademarked a new digital workflow known as PG-Pro™ that includes scanning, restoration and 3D model printing. The PG-Pro workflow takes full advantage of CAD/CAM technology and fully digital workflows to produce a monolithic restoration within 48-72 hours, at an exceptionally low price. A unique attribute of the PG-Pro process allows Albensi Laboratories to receive and process scans from all major intra oral scanners from offices worldwide. It supports scans generated by various devices, including:

- Lava™ Chairside Oral Scanner
- 3Shape™ Intra Oral Scanner
- Sirona Cerec™
- ITero™ Cadent
- IOS™ FastScan

How PG-Pro Digital Dentistry Workflow Works

1. Scanning

Restoration jobs can be received using one of two methods. The first method begins by receiving an intraoral scan taken by a doctor. The scan is downloaded into 3Shape design software, where the margin is marked and a virtual model is created for the designer to use in modeling the restoration. These virtual models are also used to generate articulated models for multi-unit cases and POM (Piece Of Mind) models for margin and contact checking on single unit model-less cases. The second method of preparing restorations involves taking a stone model created from a traditional impression and scanning it into the computer using a D700 scanner. Of the two methods, intraoral scanning provides more accurate results, and is obviously faster to process.

2. Restoration Design

Once the scan is digitized in the computer, a restoration can be designed. The insertion direction is determined and a unit is inserted from a custom tooth library developed at Albensi Laboratories. The designer then adjusts the tooth restoration to fit the specifications indicated in the dentist's prescription and the intraoral environment.

3. 3D Model Printing

During the night, the designed restorations are printed in casting material. Models generated from intraoral scans are printed in plastic using an Objet Eden high resolution 3D Printing System. The next morning the crowns and models are matched with their associated case pans and are finished using traditional pressing and casting techniques. Alternatively, cases requested to be fabricated from zirconia are milled from a puck and sintered overnight. **With the above CAD/CAM process, Albensi Laboratories is able to return quality monolithic restorations to its clients in as little as 48-72 hours.**

For Albensi Laboratories, the PG-Pro digitized process represents yet another leap towards the age of complete digital dental solutions, generating new business opportunities and propelling growth.

ABOUT OBJET

Objet Ltd., is a leading provider of high quality, cost effective inkjet-based 3D printing systems and materials. A global company, Objet has offices in North America, Europe, Japan, China, Hong Kong, and India.

Objet's 3D printing systems and 3D printing materials are ideal for any company involved in the manufacture or design of physical products using 3D software or other 3D content. Companies using Objet's solutions can be typically found in sectors such as consumer goods & electronics, aerospace & defense, automotive, education, dental, medical and medical devices, architecture, industrial machinery, footwear, sporting goods, toys and service bureaus.

Founded in 1998, the company has thousands of customers worldwide including a substantial share of the relevant Fortune 100 and Fortune 500. Its award-winning technology (12 awards in 5 years) is based upon over 110 patents and patent pending inventions.

Objet's advanced 3D printing systems and range of over 60 materials enable professionals to build prototypes that accurately simulate the true look, feel and function of an end-product, even complex, assembled goods.

The Objet Connex™ line of multi-material 3D printers features the world's only technology to simultaneously jet 2 materials. With this, users can print many different materials into a single part and print various mixed parts on the same build tray. Users can also create advanced composite materials, or Digital Materials™ featuring unique mechanical and thermal properties. Objet's range of over 60 3D printing materials simulate properties ranging from rigid to rubber-like, transparent to opaque and standard to ABS-grade engineering plastics, with a large number of in-between shore grades and shades.

Objet's 3D printers are available in a range of form-factors, from cost-effective desktop 3D printers ideal for entry-level professionals all the way to industrial-scale multi-material machines for front-line designers and top manufacturers. Objet's 3D printers feature the industry's highest-resolution 3D printing quality, based on 16-micron (0.0006 in.) super-thin layering, wide material versatility, office friendliness and ease of operation.

For more information, visit us at www.objet.com, and for more about 3D printing industry-related news, business issues and trends, read the Objet Blog.

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