First Shipment of the Pulzar™ Z1 Refractive Laser System
(Continued from page 1)

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ABSORPTION CHARACTERISTICS

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Dair et al., (2001) investigated the absorbance coefficients of laser light through balanced salt solution (BSS) and sodium chloride (NaCl).

- The absorbance of 213nm light in BSS & NaCl is much lower than 193nm.
- A wavelength not significantly affected by aqueous solutions may provide more reliable and predictable treatment outcome.

Delegates and exhibitors were excited by the features and benefits of the Pulzar™ Z1 laser system and impressed by the recent clinical results and profiles of the surgeons involved with the clinical programme.

CustomVis™ Presence at ASCRS, 2004

CustomVis™ recently attended the 2004 annual ASCRS congress in San Diego, USA. The Pulzar™ Z1 Solid State Refractive Laser was on show for all interested surgeons to understand first hand the features of this novel solid state laser system.

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CONTINUED PAGE 4
The Pulzar™ Z1’s Unique Eye Tracking Technology

(Continued from page 1)

ZTRAK™ is a limbal based eye tracking system which combines digital and analogue closed loop tracking techniques to monitor the patient’s eye position during the operation. Unlike conventional pupil tracking techniques, ZTRAK™ limbus tracking requires no dilation of the pupil, hence minimising patient discomfort during surgery.

GAZETRAK™ is a unique tracking system used to monitor the angle of the patient’s gaze and changes in fixation of the eye intraoperatively. With GAZETRAK™ if the patient’s gaze angle shifts by more than a set minimal range, the laser is automatically deactivated until gaze direction is restored. This ensures accurate laser spot placement on the eye to deliver the correct laser pulse to the corneal location for optimal treatment. Conventional eye tracking systems track only in two dimensions which can lead to laser beam misalignment during the procedure resulting in sub-optimal refractive and visual outcomes (Fig. 1a-1c). In the diagram, as the eye shifts gaze direction the laser continues to fire, resulting in a misaligned ablation. GAZETRAK™ is an essential addition to eye tracking technology featured in the CustomVis™ Pulzar™ Z1 laser system as it prevents inadvertently decentered ablations allowing for more predictable and reliable refractive outcomes.

Custom Treatment of Irregular Astigmatism and Myopic Cases

Due to the exceptional results with the first five challenging cases, Dr. Ian Anderson performed surface ablations on a further eight demanding cases in April and May this year, using the Pulzar™ Z1 solid state laser.

Four patients had severe irregular astigmatism following either penetrating keratoplasty (PK) or photorefractive keratectomy (PRK). At one month post-operative, unaided vision improved by between 2 and 9 lines (on the ETDRS chart) in three cases, and remained unchanged in one. Best corrected vision improved by 2 to 4 lines in three cases, and was stable in one. The previous surgery of one patient involved a corneal transplant, astigmatic keratotomy (AK), and PRK. After custom treatment with the Pulzar™ Z1, uncorrected vision improved from <20/400 to 20/32, and best corrected vision was 20/32 (from 20/80). On average, the achieved refraction at one month was within ± 0.25 D sphere, + 2 D cylinder and ± 0.8 D spherical equivalent of the targeted refraction.

Of the next four cases, all myopes with varying degrees of astigmatism, three had histories of AK, limbal relaxing incisions, cataract and intraocular lens (IOL) implantation or ICL. The majority of the treatments were primarily for astigmatism. At one week to one month follow-up best corrected vision was 20/12.5 in two cases, 20/16 in one, and 20/25 in the other. Further, all patients achieved uncorrected visual acuities that were the same as their pre-operative best corrected visual acuities (from 20/12.5 to 20/25 UCVA).

About CustomVis™

CustomVis™ is pleased to announce the awarding of two prestigious Australian Research Council (ARC) Linkage grants. These grants encourage and develop long term strategic research alliances between higher education institutions and industries in order to advance knowledge.

The two projects build on the relationship CustomVis™ enjoys with the School of Animal Biology of The University of Western Australia, Perth and the Department of Optometry and Vision Sciences, University of Melbourne, Melbourne.

Dr. Paul van Saarloos and Dr Mukesh Jain of CustomVis™ will be Partner Investigators of both grants.

The CustomVis™ European office in Dundee, Scotland has recently opened to support our customers in Europe, Middle East and Africa. CustomVis™ has recruited a number of people with a broad range of experience in the refractive surgery industry to provide the necessary professional support for our customers.

The support staff based in the Dundee office include

- Managing Director - Mr Simon Gordon;
- Sales Manager - Mr John Martin;
- European Service Manager - Mr Bill Ryan;
- Service Engineer - Mr Christian Marek; Service Engineer - Mr Roberto Paula Valderrama; Admin co-ordinator - Ms Kirsty Scott; Admin - Mrs Lorraine Gordon.

Bill Ryan has been involved with medical laser systems since 1987. He lived and worked in US, Brazil and Spain with LaserSight for ten years, serving as a Service Engineer and Manager.

Robert Valderrama and Christian Marek have worked over the past 7 years as Field Service Engineers in Europe, previous positions were with LaserSight.

John Martin was sales manager for Nidek refractive products and laser systems and has more than 10 years experience in the ophthalmic industry.

Surgery centres across Europe currently await delivery of a Pulzar™ Z1 solid state laser system whilst others have already been installed, for example, Germany and Spain. The first systems have successfully commenced treatments and the surgeons are very pleased with the system and the performance.

In June this year, Dr. Peter Stewart used the Pulzar™ Z1 Laser to perform LASIK on five eyes of three patients. Treatment was up to – 1.75D sphere and – 4 D cylinder. All five cases demonstrated excellent results at one day post-operative; best corrected vision was 20/15 in three cases, 20/20 in one case and 20/25 in the other. Unaided vision was 20/15 in one case, 20/20 in two, and 20/30 in the other two cases. These initial results suggest that patients treated with the Pulzar™ Z1 laser achieve excellent unaided and best corrected visual acuities not just for regular but also challenging highly irregular corneas.
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The planned scaling up of our production facilities has allowed us to meet the increasing interest from customers and distributors worldwide. The Western Australian office has expanded to a second building to meet these demands.

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See Us At

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Absorption Coefficients (cm-1)

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See Us At

AAO
New Orleans, USA
23 - 26 Oct, 2004
Booth No. 5057

AUSSCRS
Broome, Australia
22 - 25 Oct, 2004
Booth No.

RANZCO
Melbourne, Australia
14 - 18 Nov, 2004

ASCRS
Washington DC, USA
16 - 20 Apr, 2005
Booth No 614

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