The elements of nature are also known as the elements of life or the elements of survival, for without them life could not exist. These elements are earth, water, air, fire, and ether. Aristotle included ether in the classical elements of Ionic philosophy as the “fifth essence” on the principle that the four terrestrial elements were subject to change, whereas no change had been observed in the celestial regions. Interestingly, the word quintessence comes from the 15th century Middle French quinte essence, and from the Medieval Latin quinta essentia, and literally means “fifth essence.” Quintessence is defined in the Merriam-Webster Dictionary as the essence of a thing in its purest and most concentrated form. Technology, in contrast, refers to material objects of use to humanity, such as machines, hardware, or utensils, but can also encompass broader motifs, including systems, methods of organization, and techniques. This is the perfect combination for the profession we embrace, not only because we need knowledge, skills, and good judgment, but also because we require multiple tools to carry out our tasks. The wise exercise of all of this knowledge leads to achievement of professional and personal satisfaction.

The Quintessence of Dental Technology (QDT) was introduced 32 years ago as a monthly journal in a small format. It became a bimonthly journal and then finally an annual book. For all of these years, it has been devoted to the most brilliant solutions to clinical cases and to new theories for esthetic and technological dental rehabilitation. The ability and the freedom to assemble dentists, researchers, and dental technicians who overturn established dogmas and who advance new concepts have made this book unique.

I eagerly followed every issue since 1994. At that time I was finishing my graduate program in operative dentistry, and during a dental meeting I got the QDT for the first time. I confess that I was completely captivated. Living in a region of Brazil distant from the capital, surrounded by orange and sugar-cane farms, it was not easy to find QDT every year. Thanks to the Internet this task became much easier. Being appointed as editor-in-chief was daunting, but the gratification is proportional to the book’s reputation.

Since the beginning of last year we have been working hard on this issue, and I was surprised by the fierce (and healthy) competition for space in this book. Our challenge was to select the best manuscripts that represent the philosophy of QDT. Judging contributions is difficult—described procedures had to be innovative and at the same time scientifically relevant. We received a number of excellent manuscripts; however, we focused on those that stand for improvement of oral health, technological innovation, and superior esthetics, with outstanding craftwork. In this issue we have gathered exceptional professionals from all over the world who recreate optical, mechanical, and esthetic properties found in the natural tooth. And we constantly look toward contributors with a passion for our profession and who are eager to join us in our explorations.
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Samuel C. Lee, CDT, MDC

Cover photograph by Naoki Aiba.
For approximately 13 minutes at 403°C to 750°C (Fig 33). For the enamel buildup, e.max Ceram Dentin A1 and BL1 were used, followed by application of Opal Effect, Transpa Blue, Transpa Incisal TI1 and TI2, Transpa T Neutral, and Incisal Edge (Figs 34 to 36). The crowns were removed from the working cast so that the contact areas could be completed and then fired for approximately 13 minutes (Figs 37 and 38). After firing the enamel, a correction was made with e.max Ceram Impulse Cervical Transpa, followed by another firing for approximately 7 minutes. The crowns were then glazed using the e.max Ceram Glaze FLUO and fired for 40 seconds at 730°C. The surface texture was achieved using the appropriate burs and polishing systems (Fig 39). The definitive crowns are shown in Figs 40 to 46.

Before adhesive cementation, the adaptation was checked (Figs 47 and 48) and the internal crown surfaces were sandblasted with 50-μm alu-
Figs 40 to 46  Definitive all-ceramic crowns made with Lava zirconia copings and IPS e.max Ceram veneering porcelain.
A 1.5-mm round-ended cylinder diamond bur (no. 6681.314.016, Komet, Schaumburg, IL, USA) is applied to the cervical, middle, and incisal thirds. Grooves are made to a depth equal to half the diameter of the bur to respect the anatomic shape of the tooth. The grooves are carried out on different planes. Incisal grooves connect with the facial grooves and act as a reference for incisal edge reduction. Even so, the use of silicone guides is recommended.
Figs 12a and 12b  (a) Due to the concavity of the palatal region, reference holes instead of grooves are made with round diamond burs. (b) After the partial facial preparation is carried out, a uniform tooth reduction is evident.

Figs 13a and 13b  (a) A round-ended slightly tapered bur (no. 4137F, KG Sorensen, São Paulo, Brazil) is used to finish the facial reduction, because its shape facilitates the preparation of convergence angles. (b) Completed facial reduction.

Fig 14  The same bur is used in the preparation of a shoulder with rounded inner edges or a chamfer. In this case, because of the discoloration of the root, intrasulcular margins are mandatory. How far the restorative margins go into the sulcus depends on the crestal relationship. 22

Fig 15  The final check of the tooth preparation is carried out with a vertically sectioned silicone guide. At this time, final adjustments can still be made before the impression procedures are carried out.