



**The Science and Art of**

# **Porcelain Laminate Veneers**

Galip Gürel



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# Foreword

Not that long ago dentists were mostly relied upon for the relief of pain and the restoration of decayed teeth. Everyone dreaded a trip to the dentist. A visit was associated with pain and one frequently left the office with teeth filled with silver amalgam, the generic restoration available at the time.

Esthetics, such an integral part of our lives today, was barely at the periphery of dental concerns. There were, of course, a handful of dentists who exercised the available esthetic dental options, but these options were time consuming, expensive and, unfortunately, frequently unattractive.

Change was inevitable. Awakened to beauty by the media, the public became aware of the importance of a beautiful smile. The dental profession, conscious of this growing demand, began a search for cosmetic restorations. Change came gradually. Many techniques and materials were tried and discarded. Progress was halting, often two steps forward and one step back.

1970 saw our first major breakthrough. Tooth bonding, a technique that rapidly, painlessly and much less expensively made teeth cosmetically beautiful, was born. Bonding, however, as extraordinary as it was, had a much greater effect on the dental profession than its originators ever imagined. It was a catalyst to a revolution. Dentistry would be changed forever. Bonded bridges, porcelain laminates and, infinitely stronger and more stable, all-porcelain crowns were just its immediate derivatives. Beyond that the profession expanded its perimeters.

Improvements in maintaining teeth both endodontically and periodontically were enhanced. Missing teeth were no longer automatically replaced with removable dentures – implants often rendered dentures unnecessary. A new era had arrived – a revolution in patient care with no end in sight.

And that is why this book is so valuable and important. It has circumscribed this revolution and detailed all the important changes that have occurred in our profession.

Nonetheless, my rationale for this foreword is not my appreciation of the book, but my respect for its author and his accomplishments. Dr. Galip Gürel, involved in a profession whose values were noble but antiquated, has in a relatively short time span changed Turkish dentistry.

Esthetic dentistry, although flourishing elsewhere, was unknown in Turkey. Dr. Gürel left his homeland to learn these revolutionary techniques,

but beyond learning them, he mastered them. He is currently lecturing and teaching dentists all over the world and his modern office is improving smiles daily. His efforts, beyond bolstering his reputation, have not only elevated the prestige of Turkish dentistry but have paved the way for recognition and appreciation of Turkey all over the world.

It was a monumental task Dr. Galip Gürel undertook, and after reading his book I find he has completed it exceptionally well, and I am certain that everyone who reads it will both appreciate and benefit from it.

Irwin Smigel, DDS

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# Acknowledgements

I have found that it is impossible truly to appreciate just how difficult it is to write a book. In fact, I now believe that only the writer, their family and those people of their inner circle can fully understand this daunting task. When I decided to undertake writing this book, I did not know how demanding and time-consuming a task it would be. The more that I researched, the deeper I was drawn into the material, and as I was drawn into it this incredible well of knowledge opened before me. It was actually difficult finally to stop myself and to filter through it all, while adding my own experiences and clinical work along with the photos and drawings to complete this book. The final task of arranging all this in the most presentable way possible in order to make it more readable for my colleagues was my most challenging undertaking. The key to this achievement was undoubtedly the successful teamwork throughout this project.

To start with, I must thank my wife Berna and my son Ali for supporting me in everything that I have ever done until now. However, I want especially to thank them for their exceptional patience during my absences over the last 18 months and for the love and understanding that they have shown to me throughout the preparation of this book.

In loving memory, I would like to express my gratitude to my grandmother Tomi, who has passed away, but remains the most influential person in my life. She brought me up and laid the foundation for all that I have accomplished in my life. My only regret is that she is not here to share this moment with me.

I am eternally grateful to my mother Güngör and my father Gültekin Gürel, my idols in the dental profession, whom I may not have been able to choose as my parents but who proved to be the greatest gift God could have given me, and who were not only the driving force in my choice of this profession but the foundations of my hard working, honesty and happiness.

I must of course extend my thanks to my dearest brother Gürcan and his family, every one of my patients, my friends and my associates for their tolerance and understanding during my obsession with this book.

Being a private practitioner and lecturing all over the world, the task of writing a book that requires a lot of scientific research and clinical work to support. It could not have been accomplished without the help of my associates, who were of great assistance and support in every way. I would therefore like to extend my gratitude to those associates who have been involved in each case and who have worked closely together with me for years. I would especially like to thank Dr. Kübel İltan, Dr. Birgül Yeruşalmi and

Dr. Talin Çitak for their limitless assistance, dedication and patience. I am also grateful to Dr. Ipek Cenkçiler, Dr. Elif Ay and Dr. Elif Özcan for their sincere efforts and support.

Dentistry, and especially esthetic dentistry, requires a solid team effort and it is for this reason that I have tried to share with you the smallest possible details about every aspect of esthetic dentistry. I have been very lucky to have many valuable colleagues, each a star in their specialty, who have made time in their extremely demanding professional lives to share with us the details of their techniques in their contributions to this book. I cannot thank each of them enough for their work in summarizing, as they have for us, their areas of specialty, which are very complex and broad topics. I have had the honor of the contributions of Prof. Dr. Roulet on adhesion, Dr. Claude Rufenacht on occlusion, Dr. Stephen Chu on color, Dr. Korkud Demirel on periodontology, Dr. Frank Celenza on orthodontics and Cathy Jameson on patient education. I cannot thank my colleagues enough for their work in making each of their specialties so pleasing and clear for us to read.

My everlasting thanks go to my dear Nancy Barlas and Laura K. Franklin, who with their knowledge and effort and unfailing drive worked with me to edit my texts into a more easily readable and understandable state.

It is impossible to separate prosthodontics from the lab technician and especially so in a book on PLVs, as each case I have shared with you ultimately is the product of a ceramic specialist. I would like to thank the ceramists with whom I work in great harmony every day in my daily practice and who have discussed each of the cases with me. These valuable colleagues and their teams deserve my sincere thanks: Gerard Ubassy, Jason Kim, Michael Magne, Adrian Jurim and Hakan Akbayer.

I am particularly grateful to my assistant Sinan Yıldırım for all his wonderfully supportive technical assistance and to my secretaries Nalan Ince and Sevtap, and to my clinical assistants, Yasemin, Filiz, Zülfiye, Nurhan and Ayse, who form the backbone of my clinic and who shouldered so much of this production process.

I would like to express my appreciation to Tamer Yilmaz for the wonderful photograph that was used for our cover and to Joelle Imamoglu for her valuable assistance and artistic flare in her design of the cover.

A very special thanks to all my supportive patients and especially those who showed exemplary patience during the photographing of their dental work and allowed me to share these photographs with you for this scientific record.

I am deeply appreciative of Dr. Rainer Landsee for his illustrations that have added so much to this book. I am also grateful to Peter Sielaff and his team for their editing and for their attention to each and every page of this volume.

I am eternally grateful to Horst-Wolfgang Haase, who was the person who originally gave me the idea of writing this book and encouraged me to undertake such a challenging project, and finally to Quintessence for arranging this collaboration.

Dr. Galip Gürel

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# Preface

The appreciation and pleasure that we all derive from observing anything beautiful is part of basic human nature. A beautiful image conjures positive thoughts and feelings towards someone and also provides that person with a good self-image and gives them self-confidence.

The same applies to a person's spiritual and physical esthetics. I think that the coherence of physical and esthetical appearance, as well as being at peace with oneself, is what is known as "well being". Within the foundation of all these ideas, rather than the exaggeration of artificiality, we aim to achieve a plain, more natural appearance that brings out the innate good thoughts and feelings of humans. As the natural span of life has been prolonged in our time, so have changed the concepts of "middle aged", which is now perceived as young, and "old age", which no longer seems old to us. Parallel to this phenomenon are people now in search of a younger, more attractive, dynamic and youthful appearance.

Creative people who are gifted in terms of artistic talents, with a traditional culture enriched by internationally flavored gusto and who sense and enjoy the beautiful details of living, tend to offer other people the opportunity to appreciate pleasures that are hard to explain. This is clearly seen in music, fine arts, fashion and other social activities. The aim is to present these beautiful touches and feelings to people as if they had actually been present in their lives for years.

Just as walking and running are part of man's nature, so is laughter. The most prominent expression of joy even for the blind or deaf is through their laughter. So it only follows that a beautiful smile should accompany this laughter. When we consider "esthetic dentistry" within this framework, a well-planned and beautifully achieved smile is without doubt one of the major elements in the concept of this total image of "well being".

A sparkling smile, in coherence with the lips and face, reflects a person's character and life: a smile, individual to only that person, forever present with them and so natural that it appears always to have been a part of them.

This book was written to help the esthetic dentist in treating unesthetic alignment, color, shape or form of the teeth—in other words, enhancing the smile while enforcing function and occlusion. The book examines porcelain laminate veneers, the most successful non-invasive, prosthodontic application of dentistry in this decade, with all its pros and cons. When designed and delivered properly, PLVs are not only the most sparkling, natural, man-made form of esthetic dentistry but they do not appear in any way to be anything but innate, as if they were always a part of that person and their personality.



We have used hundreds of scientific references to present to you a book on “evidence-based dentistry”. After working for 15 years with my mentors and with other successful dentists from the world of esthetic dentistry, and with the support of their research and help, I have developed some new techniques which I hope will make a contribution to the PLV world – specifically, Chapter 7, which has been designed as an atlas, and the sections involving teeth preparation for APR (Aesthetic Pre-recontouring) and APT (Aesthetic Pre-evaluative Temporaries), which I feel will become a part of all general practitioners’ daily applications. I believe minimum tooth preparation is one of the most sensitive steps in PLV applications. I am sure that you will read with great interest about the techniques for nearly 100% accuracy in this process.

Chapters 3, 4 and 5, on the important topics of adhesion, color and occlusion, are written by doctors who are unequalled in their field. In addition, the supporting specialties in the periodontic, orthodontic, and patient education chapters were written by specialists in those fields.

The expectations the esthetic dentist has of the lab technician mean that we must fully understand the process of the production of PLVs in the laboratory. Some of the world’s foremost ceramists have prepared photographs and illustrations of pressable ceramics, feldspathic refractory die, and platinum foil—all techniques which are clearly explained in Chapters 7, 9, and 10.

After reading this book you will have a very comprehensive and in-depth knowledge of the PLV process. Esthetic dentistry is an “art form”, which provides us with a youthful, pleasing, alluring and beautiful smile that can only be achieved through a combination of the esthetic dentist’s perception, talent and artistic flare along with their full understanding of the patient’s desires. Otherwise, all smiles would be the same prototype, with no personalization and character to them.

If you do everything right, no jobs are more rewarding than those of the esthetic dentistry team of dentist, specialist, technician and patient. I wish you all the best for successful clinical work and professional satisfaction.

Dr. Galip Gürel

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# Emotions...



Dear Dr. Gürel,

*I had an amazing experience today. I had driven to a business appointment in my city. Once I have arrived and was parked, I dropped the mirror in my car, so that I could check my hair and lipstick to make sure that I was presentable for my meeting.*

*“What is so amazing about that?”, you may be asking. Well, when I looked in the mirror, I thought that the person looking at me was pretty. I am thirty-two years old. Other people have espoused my attractiveness. But, until today, I didn’t see it. Until today, I had never seen my own reflection and been pleased. But, today, I saw a different person. Today, the person looking back at me in the mirror – me – was pretty.*

*The only thing that has changed is my smile. You changed my smile. I came to you for a conference about a smile makeover, and you listened to me as I told you how much I disliked my smile and my teeth. You didn’t tease me, make fun of me or tell me I was foolish for thinking poorly of my teeth. You simply and caringly listened. And you performed magic!! Or at least that’s what it seems like to me!*

*I love my smile and the porcelain laminate veneers that cover the old teeth and have given my smile a much, needed correction and lift. I feel younger, more confident, more attractive and more self-confident. How can I ever thank you? You have touched me – and my life – in a very special way. I will be forever grateful.*

*Sincerely,  
A. Arasil*

## Details

It is the details that make porcelain laminate veneers more precious than other veneers. In cases of diastema closing there are many details

to be dealt with from the beginning. The case definition, the treatment planning and execution might be different from a normal case. And these details can be observed after the porcelain laminate veneers are bonded (Figs 9-41 to 9-46).



**Fig 9-41a, b** Note the proportions that are delicately provided by the PLVs, even though there were multiple diastemas at the beginning.

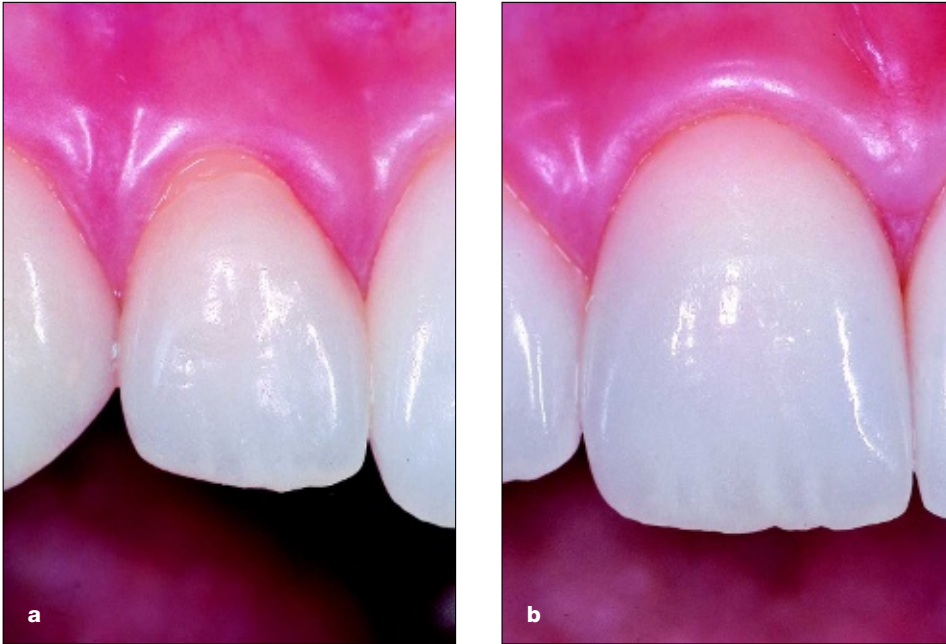


**Fig 9-42** The length of the incisors just follow the curvature of the lower lip.



**Fig 9-43** The incisal edges of the centrals 3 mm away from the upper lip, and the delicately built-up translucencies inside the PLV, allow a very natural, youthful smile (ceramist: *G. Ubassy*).





**Fig 9-44a, b** When every veneer is observed one by one, all the elements that makes a tooth look natural can be seen. The color transition of the tooth within itself is exactly produced. Note the higher chroma at the cervical 1/3rd, the higher value on the middle 1/3rd, the translucencies and mamelons at the incisal 1/3rd.



**Fig 9-45a-c** Viewing the mouth from different angles should not make any difference in the perception of the PLVs which closed the gaps. Note the front-back relation of the centrals, laterals and canines as well as the progression of the incisal embrasures which get bigger and wider towards the canine.



**Fig 9-46a, b** The impression of a beautiful smile on the whole facial expression.