

Called *into* action

A firm believer of digital dentistry, **Dr Pokpong Amornvit** has made it his mission to contribute to the literature and education of the technology's benefits. He shares about his journey with exocad and the challenges in promoting digital dentistry in the region.

By **James Yau**

In today's marketplace, the advantages and capabilities of digital dentistry may be taken as fact but as Dr Pokpong Amornvit recalls just several years ago, digital dentistry was not always the clear method of choice.

"In 2015, Thailand had only about 20 intraoral scanner units in the whole country and only person who really knew how to use the intraoral scanner was the seller representative. Today, we have almost 3,000 units," said Dr Amornvit.

The Thai dentist first completed his certificate in implant dentistry before specialising in maxillofacial prosthesis for his master's education, where he grew to understand the anatomy of the face.

Practising as a maxillofacial prosthodontist within a multidisciplinary treatment team in the early 2010's, Dr Amornvit was then exposed to range of complex prosthesis cases such as enucleation following prosthetic rehabilitation of ocular defects, implant

retained finger prosthesis, and even exoskeletons.

Dr Amornvit recounted that the limitations and challenges with using early iterations of CAD/CAM software were the high cost of scanning and printing, lack of integration with third-party software, lack of importing in colour codes, and the lack of compatibility with additional scans.

Despite these teething pains, Dr Amornvit was confident that digital

Dr Pokpong Amornvit, founder of PPFACEDSIGN



dentistry was the way of the future but felt that the wider industry remained unconvinced of the technology.

This led Dr Amornvit to pursue a PhD in oral science from 2017-2020 at the Prince of Songkla University where he sought to contribute to the growing corpus of scientific literature that cemented the advantages of the technology.

"I believed that intraoral scanning was the digital key to open the digital world of the dentistry. At that time, people still preferred polyvinyl siloxane impressions over intraoral scans as they believed it was not accurate enough. During my PhD, I needed to establish the scientific data that proved that the technology can be very accurate," he said.

Today, Dr Amornvit is actively involved in teaching and training dental professionals in the use of digital technology to enhance the quality of dental care and patient experience.

DIGITAL CHEMISTRY

While Dr Amornvit recognises the significant strides digital dentistry has made, he believes that exposure and practice with its tools and workflows at the undergraduate level is insufficient. This leaves continuing education providers like himself to shoulder the responsibility of training professionals in the field for the benefit of the wider dental community in the region.

Based in Bangkok, Thailand, Dr Amornvit runs PPFACEDSIGN, a training centre with

a goal of educating dentist in South East Asia about digital dentistry, where emphasis is placed on the understanding of both software and hardware to maximise the benefits of the technology.

Moreover, Dr Amornvit advocates for a multidisciplinary approach in his workflow. This encompasses restorative, implant, and orthodontic techniques, where he progresses from scanning to CAD/CAM design, to surgical guides, and restorative works including full-mouth rehabilitation. His software of choice is exocad having been a user of the CAD/CAM software for over 10 years.

"Despite not having spoken for exocad before, I feel that we share the same chemistry regarding the importance of face scans and multidisciplinary workflows. To provide the best outcome for the patient, multidisciplinary techniques are important as no single discipline can do the job. I think that this vision is the new trend that will change the world of the dentistry again," he said.

"Until recently, we needed to use different platforms for different steps in scanning and CAD/CAM design. I feel that exocad is constantly developing new features to improve the workflow of the dentist," he added.

Dr Amornvit's digital workflow is based on a philosophy of digital facial-driven design and digital smile design which emphasises

the importance of facial profile, proportions, harmony and aesthetic oral rehabilitation, using digital smile design to create an aesthetically pleasing face.

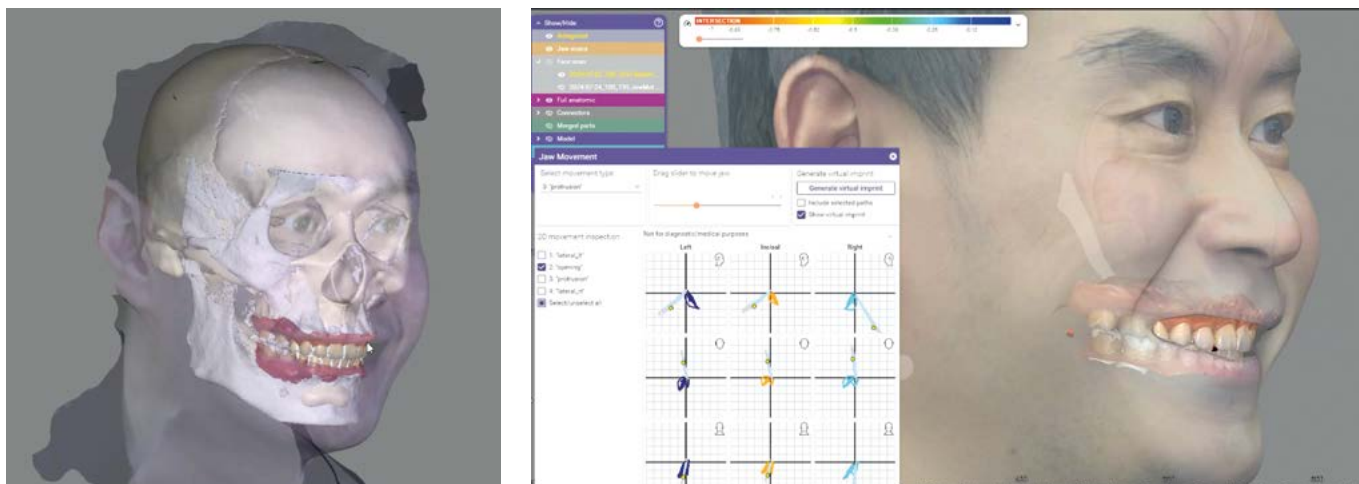
To realise this philosophy, articulator systems are a key feature in CAD/CAM software that Dr Amornvit prioritises.

He shared a case example, where utilising facial-driven design, his goal was to align the teeth with the features of the patient's face. After aligning the patient's worn teeth using Invisalign, he imported the CBCT scan of the jaw motion which allowed him to control the occlusion of the patient with precision.

Moreover, the benefits of articulator systems are extended into the manufacturing process where dental technicians are also provided with a clear understanding of the patient's occlusion. Coupled with the low supply of technicians in Thailand, this feature is especially important in saving costs and treatment time by reducing misprints.

"This is the problem South East Asia is facing. In Thailand, we have 19 dental schools but only one dental technician school. The number of dental technicians is low and the ratio of technicians to dentists is not enough," he said.

Against this background, Dr Amornvit believes it is important for dentists to collaborate and train dental technicians to understand a patient's needs, not only in terms of restorations but occlusions and aesthetics as well.



For Dr Amornvit, virtual articulator systems are a key component in CAD/CAM software to tackle complex multi-disciplinary prosthetic rehabilitation cases



As a maxillofacial prosthodontist, Dr Amornvit saw how digital dentistry enabled the creation of complex prosthesis from fingers to facial features. Assured of its capabilities, he hopes to inspire and train younger dentists to master the technology through PPFACEDSIGN

"I try to inspire the young generation of the dentist to understand the workflows, software and its pitfalls, to facilitate clear communication between the clinic and the lab," he added.

Furthermore, as the capacity of software and data collection

progresses further, Dr Amornvit believes that AI-based tools will make complex treatments easier to tackle as it can quicken and improve the accuracy of steps in CAD/CAM design such as occlusion planning.

He added that he is looking forward to exocad's upcoming release of

its 'A.R.T., Advanced Restorative Treatment'. The smile design feature combines tooth alignment with restorative treatments for comprehensive dentistry within the exocad software, through AI-based technology.

With these developments, Dr Amornvit believes that dental schools globally need to do more to incorporate digital dentistry in the syllabus. As a part-time instructor at a dental university in Thailand, Dr Amornvit is aware of the constraints schools were up against face in introducing new methods.

"While dental schools are trying to incorporate digital dentistry into their undergraduate syllabus, I understand that the depth of teaching is likely to be rather basic due to budgetary and time constraints. I hope that more stakeholders like digital dentistry manufacturers and private trainers can fill this gap, by collaborating with one another to facilitate the knowledge sharing and training needed," he explained.

Moreover, with Dr Amornvit set on raising the bar of digital dentistry, he called on the support of different stakeholders in South East Asia to bring the region to the forefront of the field, hoping that his own journey could serve as an example for others.

"I run the PPFACEDSIGN training centre as a passion. If you regard South East Asia as a whole, the region is still developing in its adoption of digital dentistry and its workflows. However, with the region's large supply of talented dentists and its big demand for digital dentistry, I believe we have the potential to be a leader in the field," he said.

Dr Amornvit concluded: "I try to provide the education needed to progress the community's ability because I want to use myself as a representative of dentists in South East Asia, to show to we have the capability and strength to lead the field in digital dentistry." **DA**