In-house clear aligners

1963

Shanks

Clear teeth guard

1946

Herald Dean Kesling

Tooth Positioner

1960 | 1950 | 1940 | 1900

1959

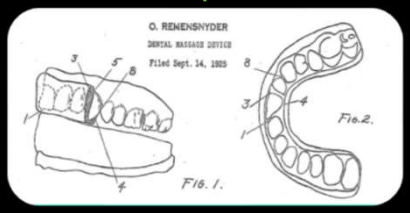
Henry Isaac Nahoum

Dental Contour Appliance

1925

Orrin Remensnyder

Flex-O-Tie



invisalign®

1999

Zia Chishti & Kelsey Wirth

Align Technology

1985

James A. McNamara

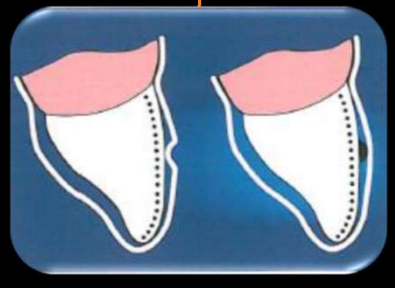
McNamara's Invisible Retainers

2000 | 1990 | 1980 | 1970

1993

John J. Sheridan

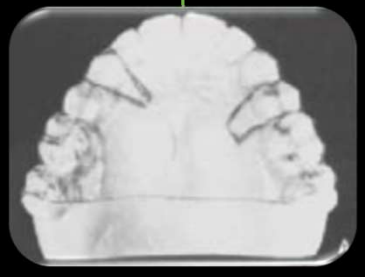
Essix



1971

Robert John Ponitz

Ponitz's Invisible Retainers




alignerco
byte
NewSmile
SPARK
clearcorrect
clearcaps
3M
Clarity
STAR
ALIGNERS
CLEARARC
Orthodontic Aligners
SmileAligner
invisalign
SureSmile
PROFALIGNER
the complete solution
WonderSmile
mtm
clear-aligner
SLX
Clear
Aligners
ClearSmile
ALIGNER
LINE
BASMA
Beforedent
snazzy
SOU
smile
SDalign
OOOMPF

clearcorrect
A Straumann Group Brand
2500 – 5500 $

invisalign®
2000 $

OOOMPF
2000 – 2500 $

CA
3000 – 5000 $

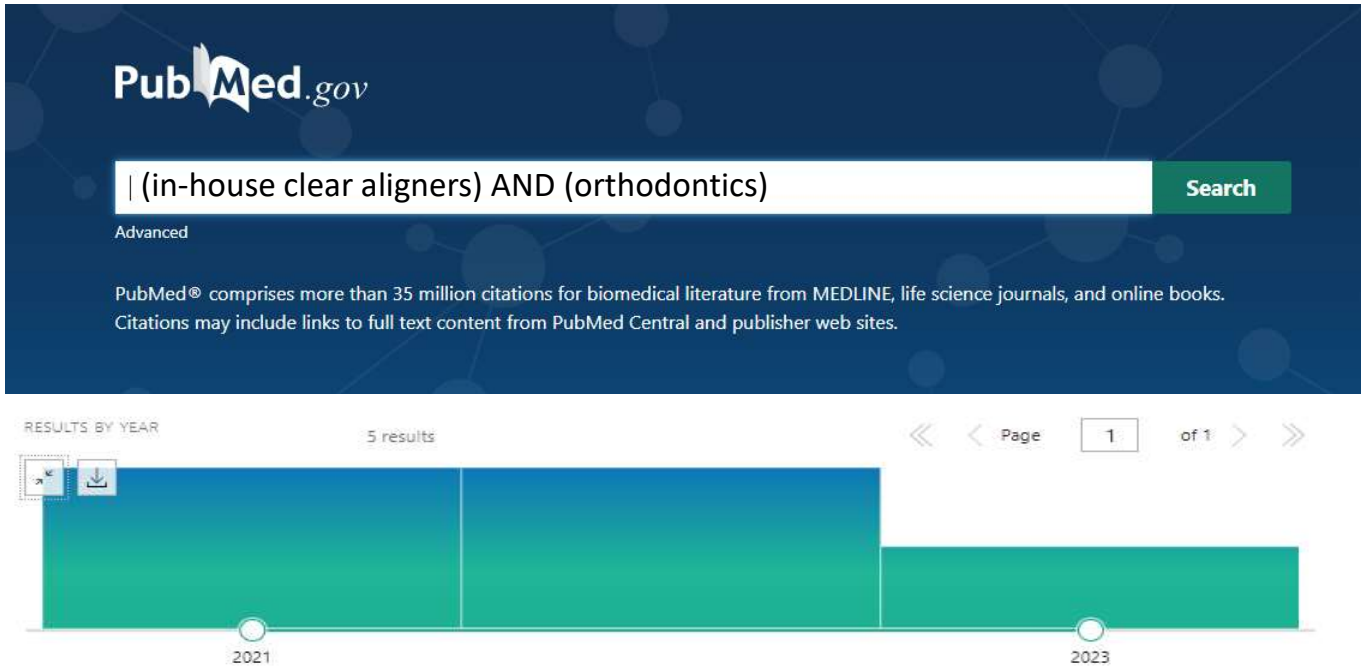
Direct to consumer aligners!!

Cheaper !!

Faster !!

No need for doctor !!

In-house clear aligners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RESULTS BY YEAR
5 results
Page 1 of 1
2021
2023

Cureus

Open Access Original Article

DOI: 10.7759/cureus.30147

The Effectiveness of In-house Clear Aligners and Traditional Fixed Appliances in Achieving Good Occlusion in Complex Orthodontic Cases: A Randomized Control Clinical Trial

Samer T. Jaber [1, 2], Mohammad Y. Hajeer [2], Ahmad S. Burhan [2]

Why in-house aligners??

CONTROL

More control over TX plan

Absolute awareness of each tooth movement

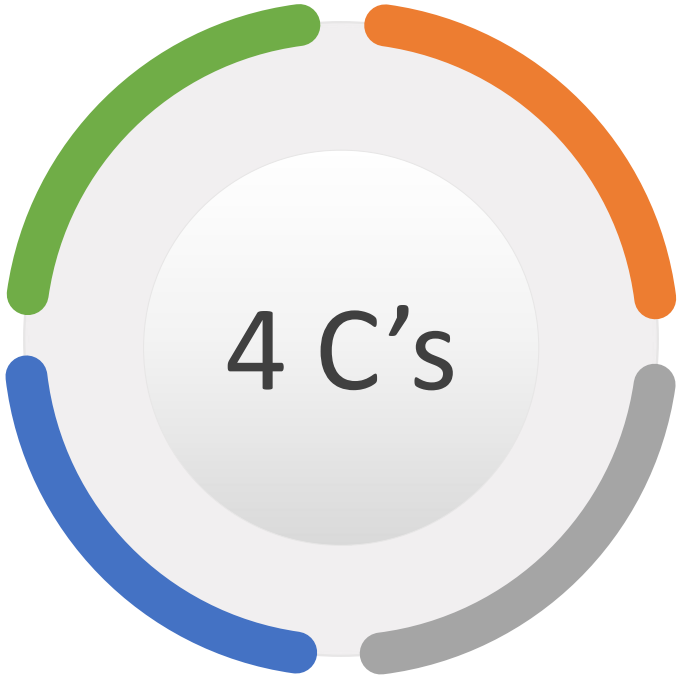
Easy restart whenever needed

CONVENIENCE

Start cases as soon as the next day

Lost or broken aligners replaced immediately

Revisions in days not weeks



COST SAVING

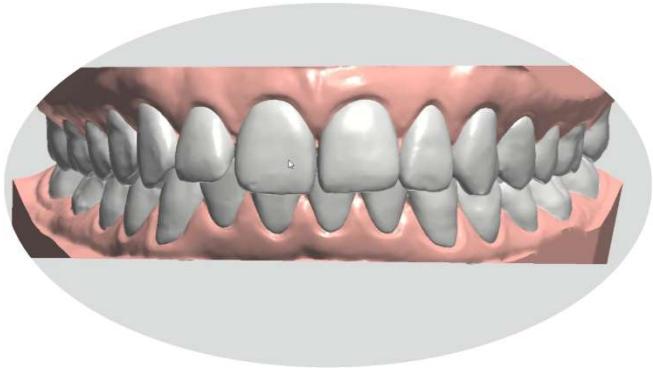
Reduce the cost by at least to half

COMPETITION

Compete with direct to consumer aligners

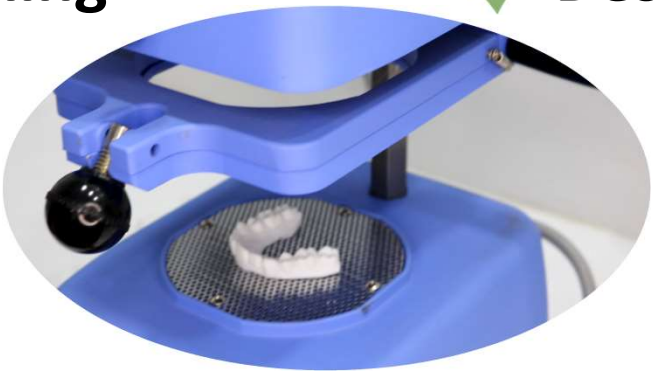
In-house aligners Workflow

✓ Scanning



✓ Designing

✓ Printing



✓ Thermoforming

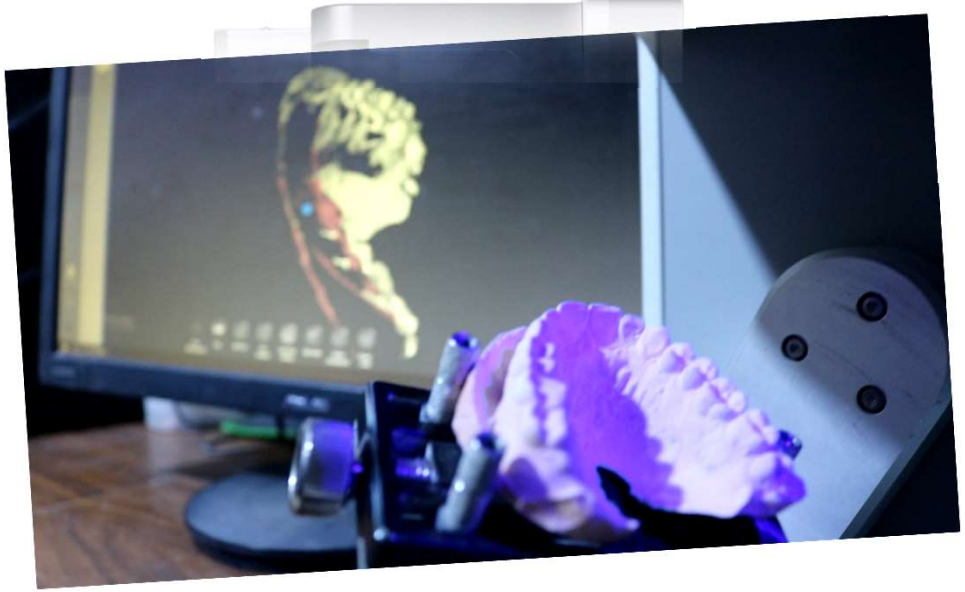
✓ Delivery

✓ Assistant

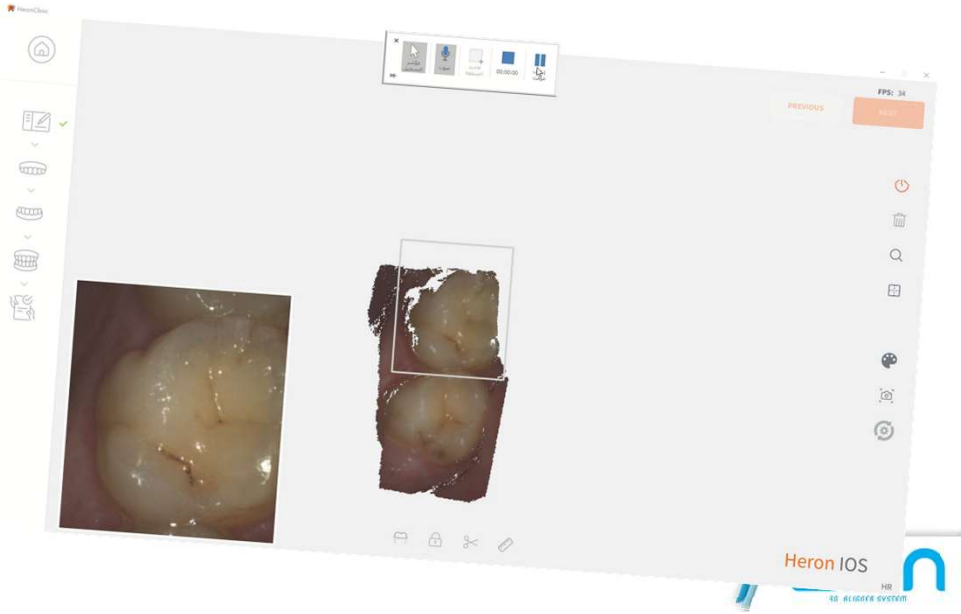
✓ Specialist

Scanning

Extraoral Scanning (Indirect)



Intraoral Scanning (Direct)



Validity and Reliability of digital dental models in comparison to plaster dental models for orthodontic purposes

الباحث: الدكتور سامر طريف جابر

طالب دكتوراة - قسم تقويم الأسنان والفكين - كلية طب الأسنان – جامعة دمشق

المشرف: الأستاذ الدكتور محمد يونس حجير

أستاذ في قسم تقويم الأسنان والفكين – كلية طب الأسنان – جامعة دمشق

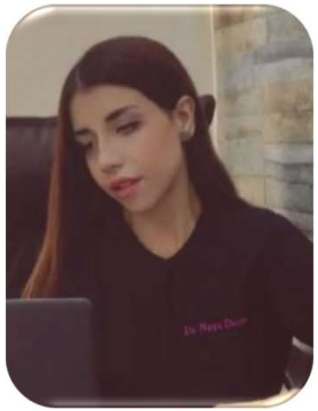
- There were **no significant differences** between the digital models and the original plaster models for the measurements done in the study.
- Digital models **seem to be a clinically acceptable** alternative to stone casts for the clinical applications in orthodontic treatment

أ.د. محمد يونس حجير

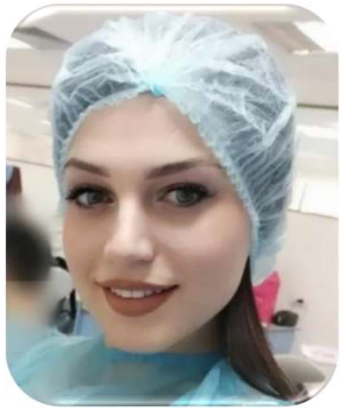
د. سامر طريف جابر

الدقة البعدية للنماذج السنية ثلاثية الأبعاد المشكلة باستخدام المسح المباشر داخل الفموي للأقواس السنية بالمقارنة مع المسح ثلاثي الأبعاد للنماذج السنية المصبوبة من أجل التطبيقات السريرية في تقويم الأسنان

خالد الخولي



نايا ديفيد

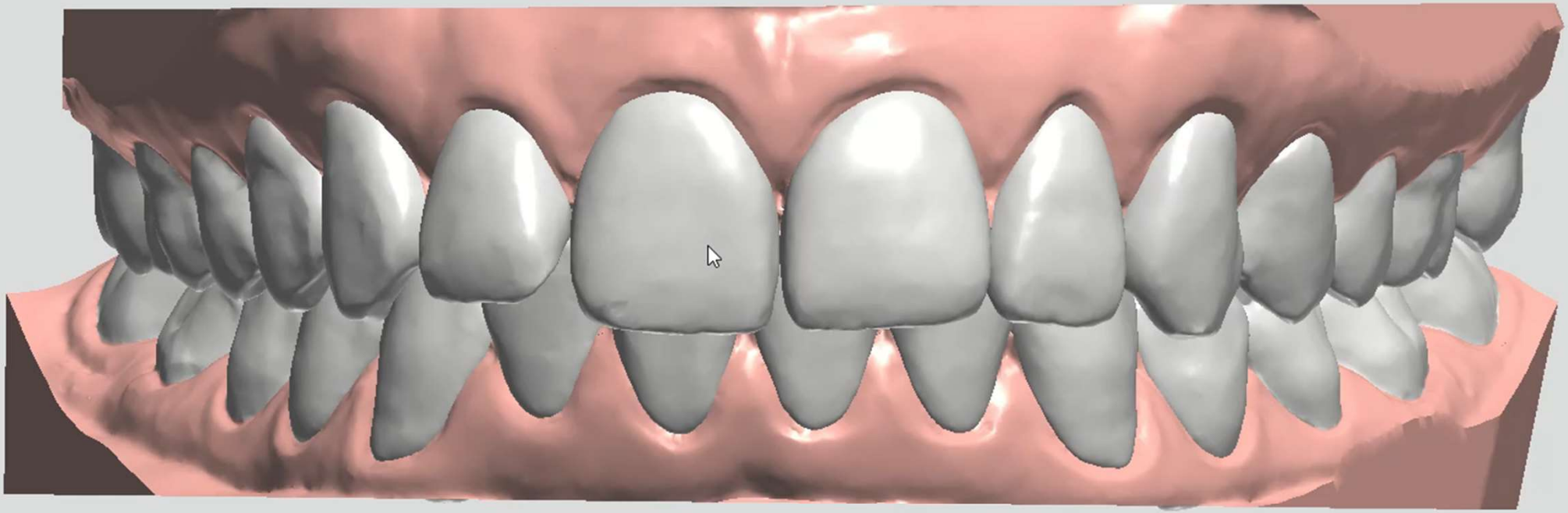


رباب الشمق

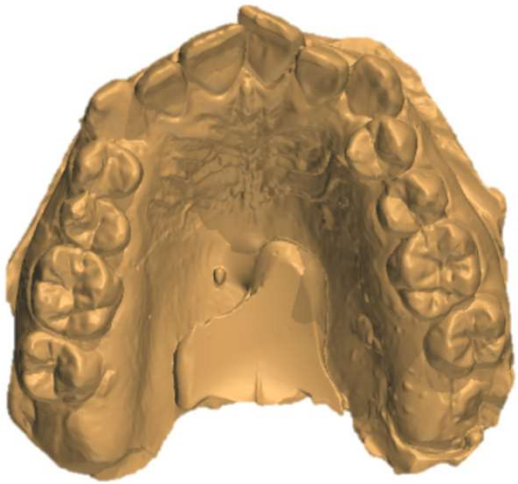
Extraoral Scanning (Indirect)

Intraoral Scanning (Direct)

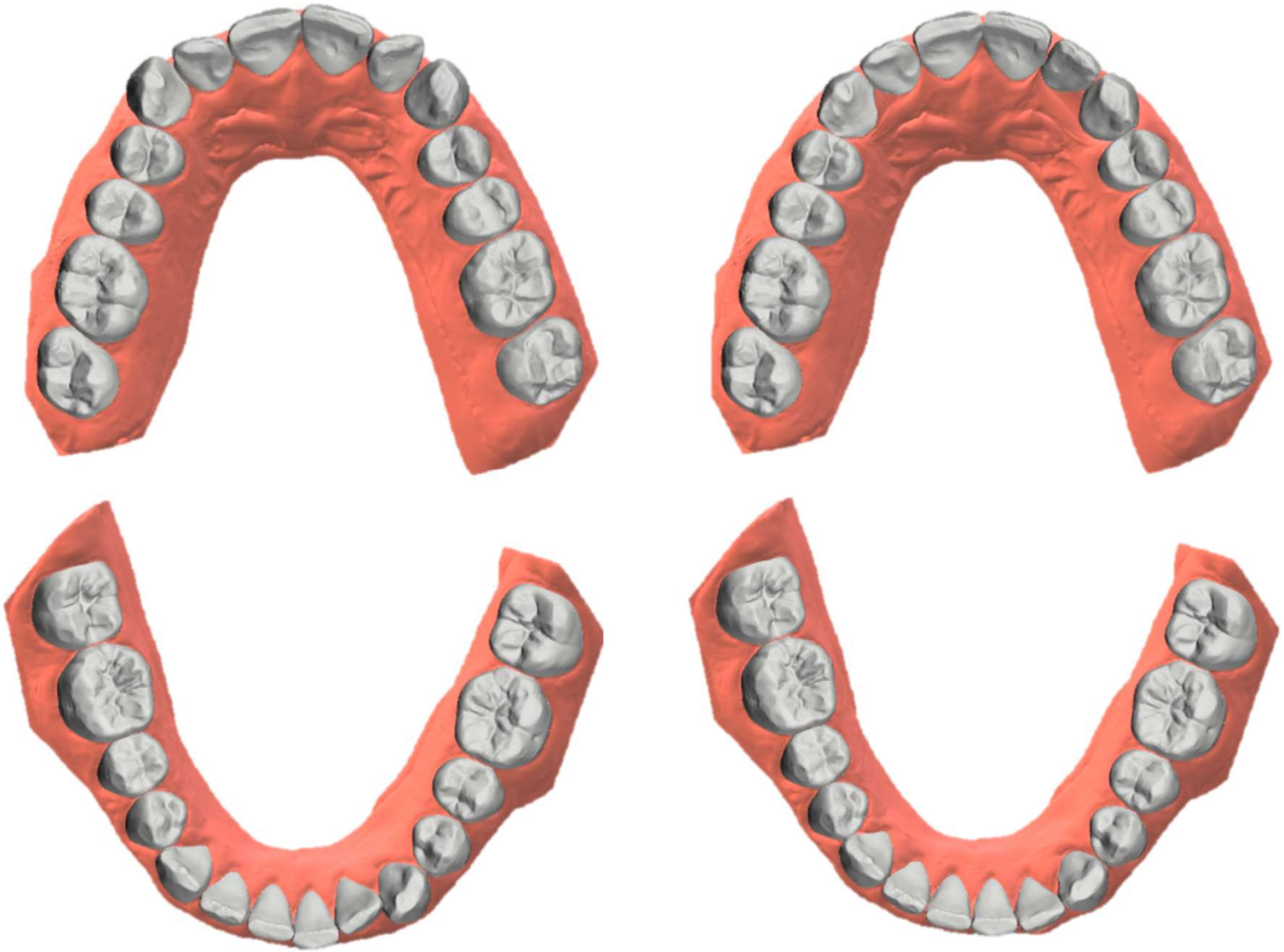
Extraoral Scanning (Indirect)		Intraoral Scanning (Direct)
★★★★★	Validity	★★★★★
★★★★	Ease to use	★★
★	Convenience	★★★★★
★★★★★	Chairside time	★★
★★★★★	Cost effective	★★★★★



Virtual Setup





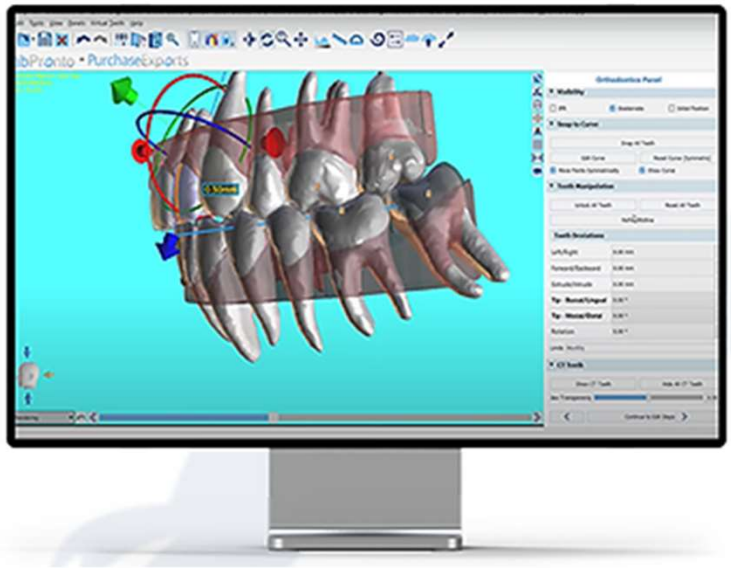
Staging

	Mesial/Distal	Buccal/Lingual	Extrusion	Intrusion
Distance Step Size (mm)	0.20	0.20	0.15	0.15

	Tip	Torque	Rotation
Rotation Step Size (deg)	1.50	1.00	1.50

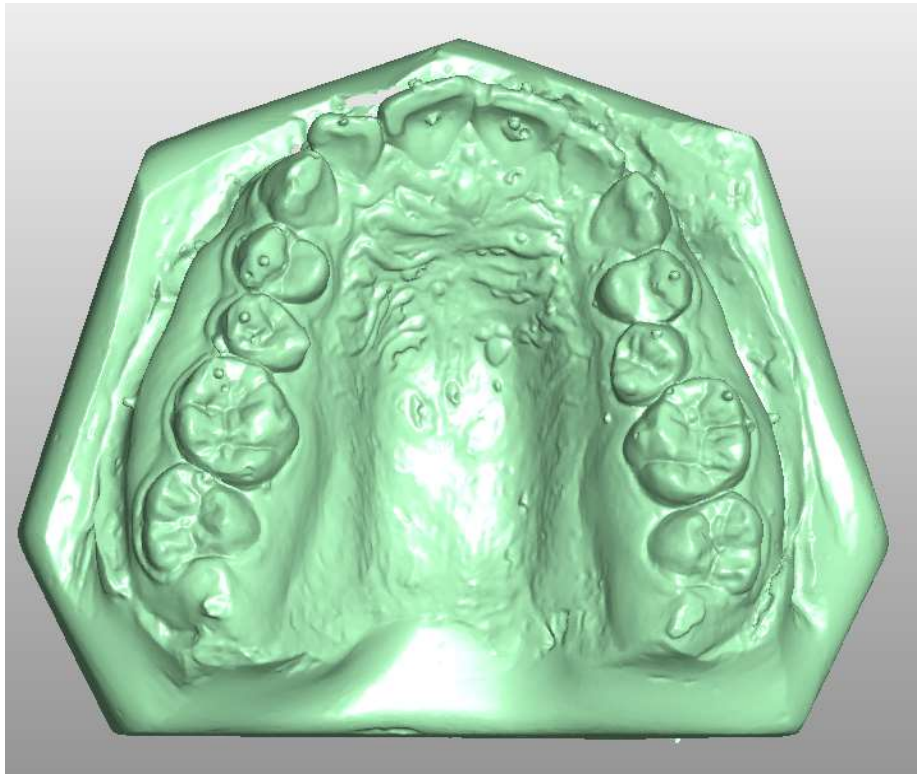
AI DRIVEN
ALIGNER SOFTWARE

Auto segmentation
Auto alignment
Auto superimposition



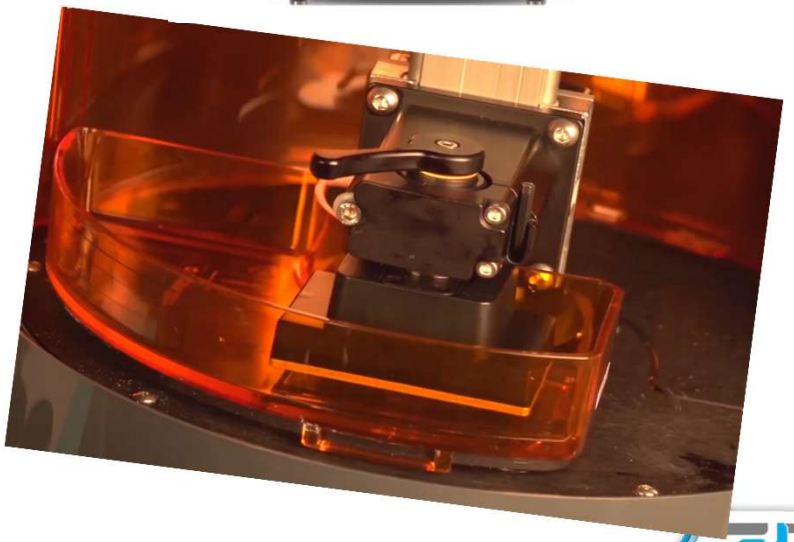
Models segmentation	★★★★	★	★★★★★
CBCT support	★★★★	★★★	
Treatment planning	★★★	★★	★★★★
Superimposition	★★★	★★	
Simulation	★★	★★★	★★★★★
Activation fee	★	★★★	★★★★★

3D Printing



Fused Filament Fabrication

Digital Light Processing



Fused Filament Fabrication

Digital Light Processing

Received: 14 April 2020 | Revised: 19 October 2020 | Accepted: 24 October 2020
DOI: 10.1002/cre2.366

ORIGINAL ARTICLE

Clinical and Experimental Dental Research Open Access WILEY

Evaluation of the fused deposition modeling and the digital light processing techniques in terms of dimensional accuracy of printing dental models used for the fabrication of clear aligners

Samer T. Jaber[1] | Mohammad Y. Hajeer[1] | Tarek Z. Khattab[2] | Luai Mahaini[1]




- FDM and DLP models had **no significant differences** in comparison to the original models.
- Generally, the accuracy of the produced 3D models by the FDM and DLP techniques **seemed acceptable**.

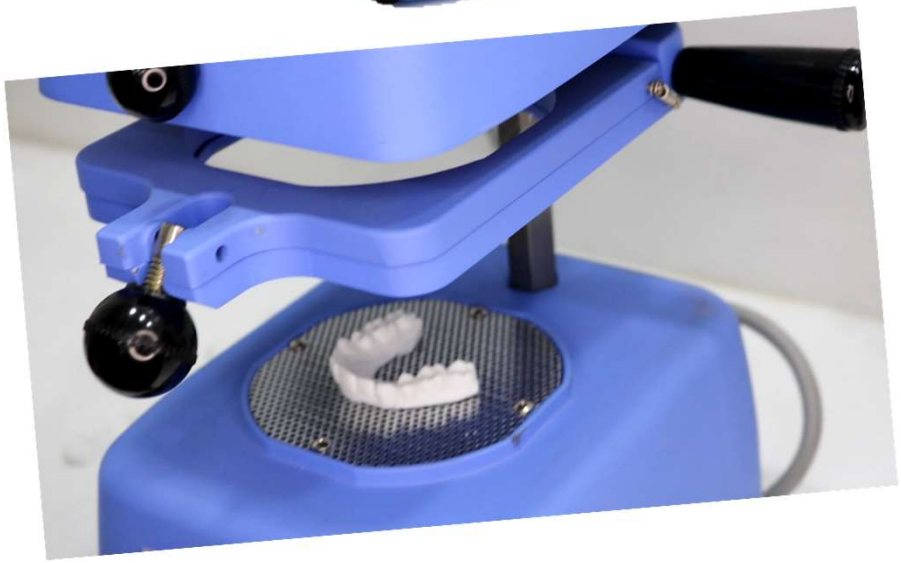
Fused Filament Fabrication

Digital Light Processing

Fused Filament Fabrication		Digital Light Processing
★★★★	Validity	★★★★★
★★★★	Ease to use	★
★	Printing speed	★★★★★
★★	Surface roughness	★★★★
★★★★★	Cost	★

MAXOS
DIN 70080-16

Vacuum Thermoforming



Pressure Thermoforming

تقييم انطباق الراصفات المشكلة بتقنية التفريغ بالمقارنة مع الراصفات المشكلة بتقنية الضغط

الباحث: الدكتور سامر طريف جابر
طالب دكتوراه في قسم تقويم الأسنان والفكين بكلية طب الأسنان جامعة دمشق
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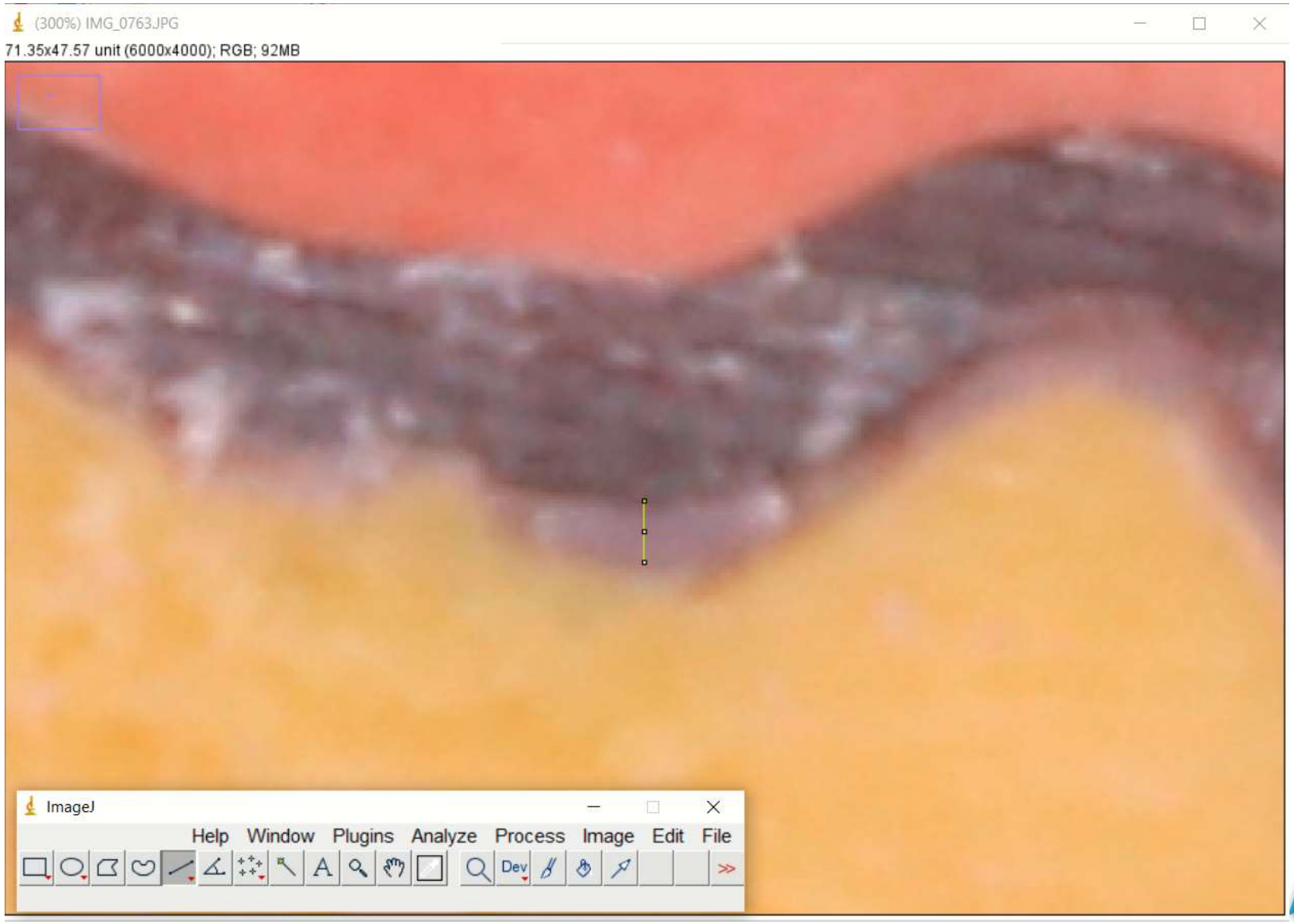
أستاذ في قسم تقويم الأسنان والفكين بكلية طب الأسنان جامعة دمشق


(300%) IMG_0763JPG
71.35x47.57 unit (6000x4000); RGB; 92MB
ImageJ
Help Window Plugins Analyze Process Image Edit File
Dev

- **There were no significant differences in aligners fit over their original models between the pressure and vacuum thermoforming techniques.**

- **Pressure formed clear aligners have a superior internal fit in comparison to the vacuum formed aligners over the gingival margin, whereas the vacuum formed aligners have the superior fit over the occlusal surfaces and incisal edges.**

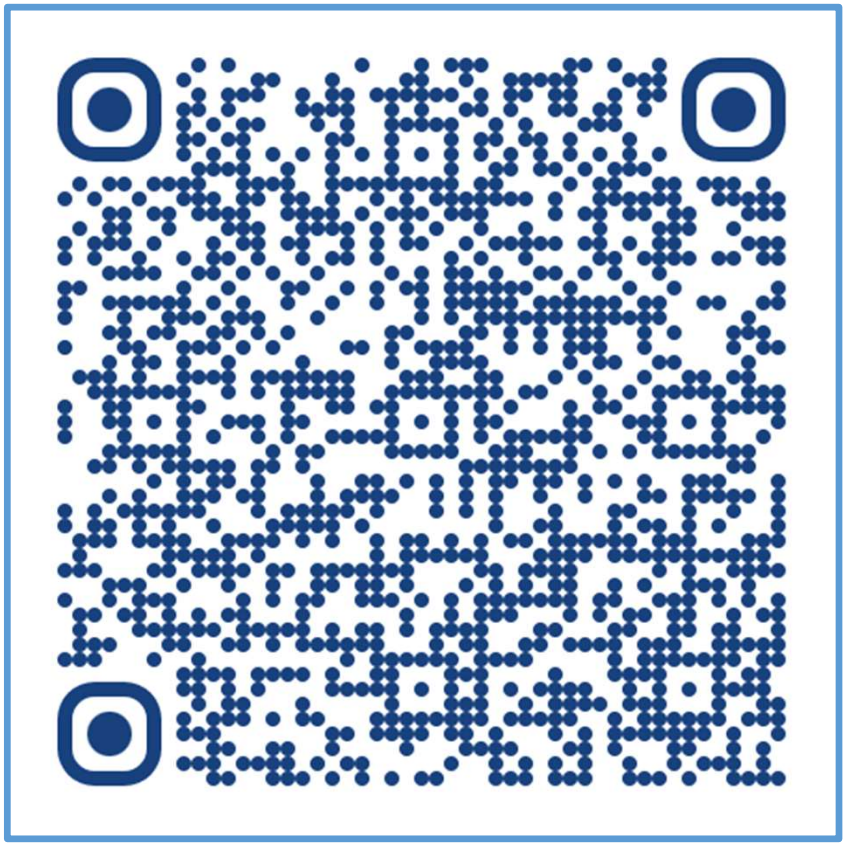
Vacuum Thermoforming

Pressure Thermoforming

Vacuum Thermoforming		Pressure Thermoforming
★★★★	Validity	★★★★★
★★★★	Ease to use	★
★	Heating control	★★★★★
★★★★★	Air compressor	
★★★★★	Special sheets	★★
★★★★★	Cost	★★

As a conclusion…

- Clear aligners can be fabricated in-house/office using validated cost effective CAD/CAM techniques.
- In-house clear aligners could be a cost effective replacement for the aligners provided by the different manufacturing systems, and that would encourage many orthodontists to use it as an alternative for traditional orthodontic appliances specially in the complex cases.



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GHAZA


Thank you!

FOR ANY HELP