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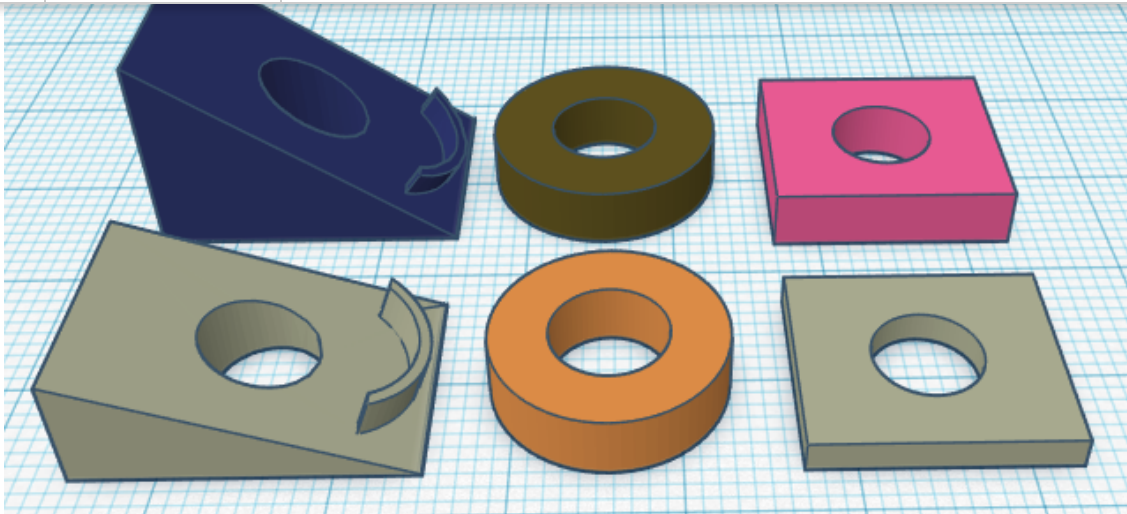
## Makers @ HS/HSL: Dental Composite Research

<b>Maker:</b>	Haifa Maktabi
<b>Affiliation:</b>	<a href="#">University of Maryland School of Dentistry</a>
<b>Project:</b>	3D model and print dental composite research gear
<b>Used:</b>	<a href="#">Tinkercad</a> , <a href="#">Afinia H480</a>

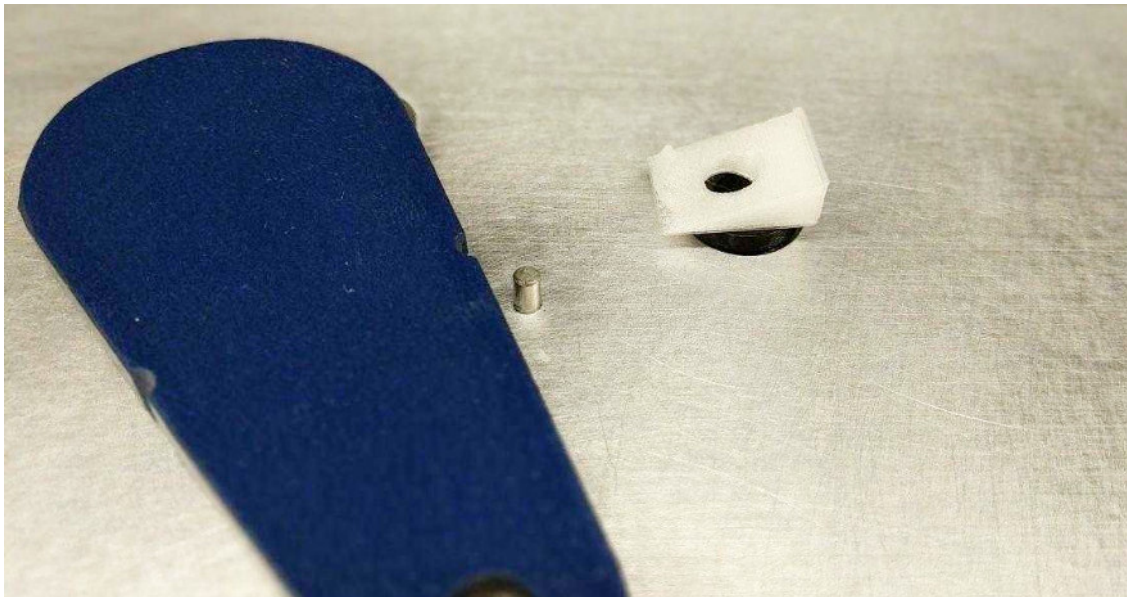
Haifa Maktabi is a resident in the [University of Maryland School of Dentistry's two-year AEGD MS degree program](#). Under the guidance of [Dr. Mary Anne Melo \(DDS, MSc, PhD\)](#), Haifa is investigating the effects that different light curing methods have on bacterial growth and degradation of composite restorations that can lead to recurrent caries, or tooth decay.

Modern dental composite resins are light-activated resins that harden when exposed to light of a certain blue wavelength. Haifa's research includes curing composite samples with the curing light positioned at particular angles and distances away from the restorative filling.

To ensure standardized samples, she collaborated with HS/HSL Innovation Space staff to design and 3D print guide blocks to replicate various light curing angles and distances.

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Six different guide blocks to replicate curing light angles and distances, modeled in Tinkercad.



Angled guide block 3D printed in semi-transparent filament, on top of a 2mm circular guide block printed in black filament.

"Clinicians are spending an increasing amount of time replacing failed composite restorations, which are often the result of recurrent decay caused by bacterial growth around the uncured portions of the composite," Haifa observes. "Our work is aims to increase the longevity of composite restorations by understanding and achieving optimal [light curing] conditions."



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from [King Saud University](#)  
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## Emerging Tech in the News and Literature

1. [University of Maryland Dedicates A. James Clark Hall, Transforming Region's Biotech Corridor](#) (umd.edu)
2. [Four-Dimensional Bioprinting As a New Era for Tissue Engineering and Regenerative Medicine](#) (frontiersin.org)
3. [In Vivo and Ex Vivo Methods of Growing a Liver Bud Through Tissue Connection](#) (nih.gov)

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## 3D Print Your Holiday Ornaments!

3D print a holiday-themed model at the [HS/HSL Innovation Space](#) now through December 20! We've put together a [selection of models](#) from diverse cultural and religious communities to help get you started. See [our blog post](#) for more details.



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## Upcoming HS/HSL Innovation Space Workshops

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- December 12, 2017

### Introduction to 3D Modeling

- December 18, 2017

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For more information, visit our webpage at <http://www.hshsl.umaryland.edu/services/inspace/>.



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