

## UV CROSSLINKING

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**Overview:** It is possible to crosslink bioinks and printed structures using UV light. This creates a more mechanically firm structure through the 365 or 405 nm wavelength.

**Materials:**

CELLINK'S INKREDIBLE or INKREDIBLE + printer  
Photocrosslinkable bioink (ex: GelMA)  
Sublime Text Software

**Protocol:**

1. To crosslink material during or after printing, there are certain commands that must be within the code. After creating the 3D model and using Slic3r to slice the model, open the g-code file in the program Sublime Text.
2. Indicate the time points for crosslinking. At these times points, use the following commands.

M753 ; retracts both print heads  
G0 Z0.00 ; lowers the print head to Z=0 mm  
M764 ; turns on LED light  
G4 PX ; pauses printing for X milliseconds  
M765 ; turns off LED light

3. These commands can be used after every layer, or at the end of the print. The layer height can be changed in the g-code based on the amount of desired crosslinking.

**G-codes:**

N/A

**Further Information:**

The Igracure 2959 in the ink is at a 0.5% concentration. It should cure under a 365 nm UV light. During the printing process, approximately 15 seconds of UV light exposure after printing of each layer or every other layer should be sufficient to initiate the cross-linking.

*UV 365 nm specs*

**References:**

N/A

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