

VISUALIZATIONS FOR A MULTI-MATERIAL, MULTIPHOTON STEREOLITHOGRAPHY AND DIGITAL LIGHT PROCESSING

Summer Research Project

Student: **Patricio Salomon-Mir**

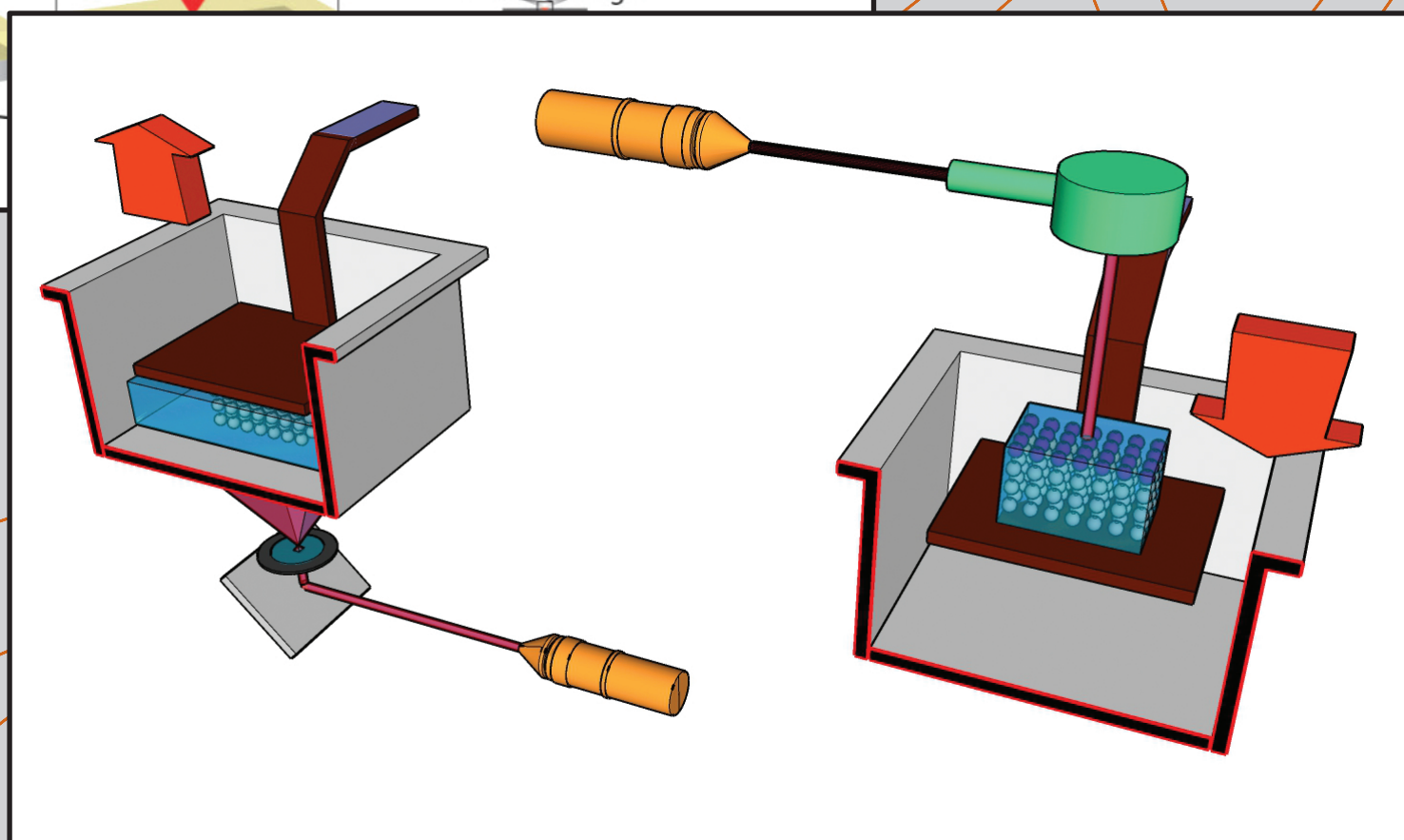
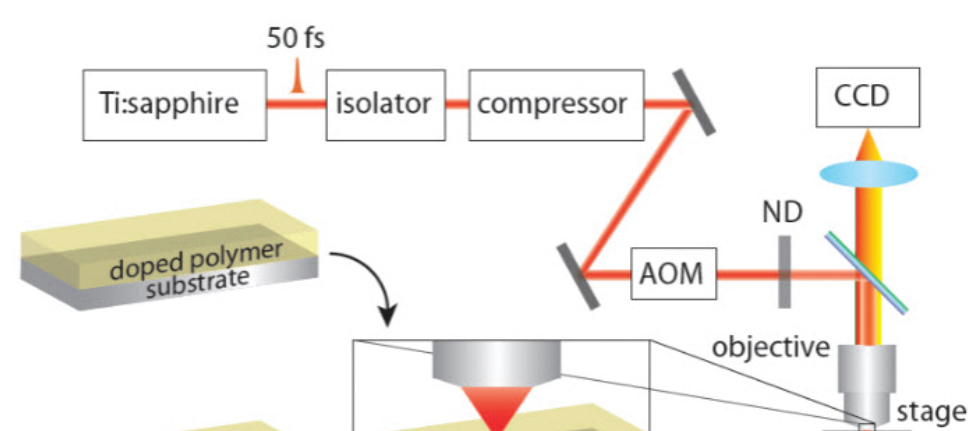
Lead Advisor: **Jorge Paricio Garcia, MID, HRM, PhD**

Advisors: **Seung Yeon Kang PhD, UConn School of Mechanical, Aero space and Manufacturing Engineering**

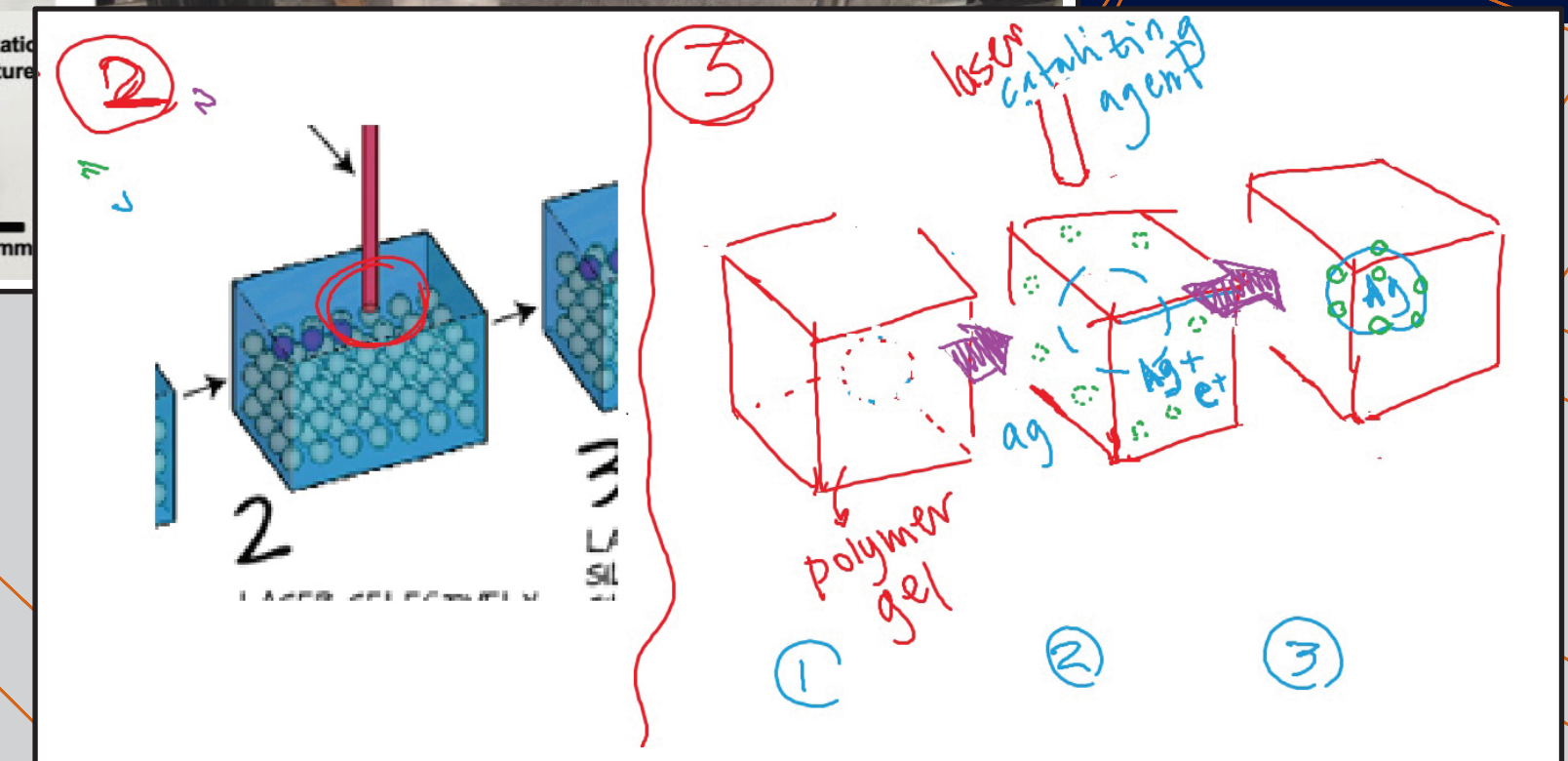
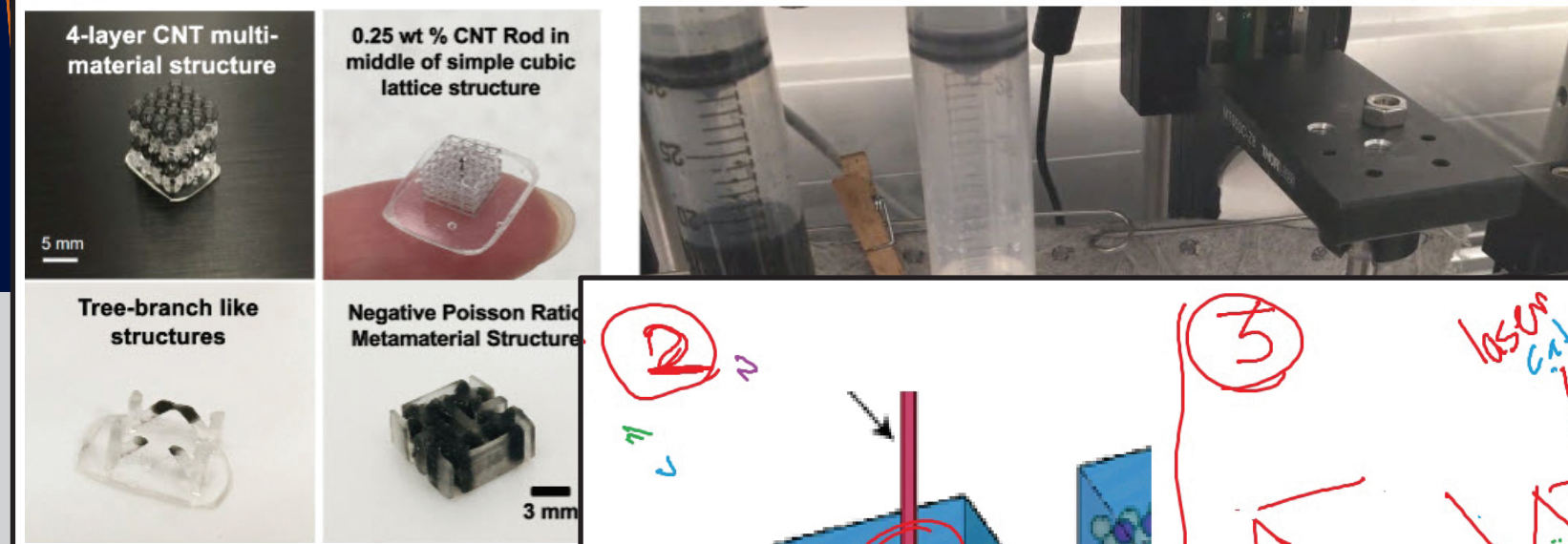
Patricio Salomon-Mir, a student from the School of Mechanical, Aerospace, and Manufacturing Engineering, has led an innovative investigation into advancing complex visualizations for a multi-material, multiphoton stereolithography (MM-SLA) method of 3D printing. Collaborating with faculty members Seung Yeon Kang and Jorge Paricio Garcia, Patricio's work is an integral part of a project funded by a grant from the Department of Defense (DOD).

The project focuses on enhancing the understanding of advanced 3D printing techniques, specifically stereolithography (SLA) and digital light processing (DLP) with femto-second lasers.

Multi-material multiphoton stereolithography (MM-SLA)



Multi-material digital light processing (MM-DLP)



Patricio transformed the initial visuals into detailed, workable diagrams to illustrate these complex processes, with the help of many discussions and lab visitations throughout the summer. These visualizations are designed to be accessible to the general public, making multi-material 3D printing concepts comprehensible to a broader audience.

To achieve this, Patricio used visualization programs to build credible, informative diagrams that simplify the complexity of MM-SLA/SLA methods. The work not only contributes to the academic field but also plays a key role in enhancing public understanding of advanced manufacturing technologies. The visualizations created by Patricio Salomon-Mir will be showcased as part of a grant presentation for the DOD grant, highlighting the potential applications and innovations in multi-material 3D printing technology.