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3D Printing Plastic Scintillators MADISON DURRANCE, NICOLAS MERINO, NOWSHERWAN SULTAN, RALPH FRANCE, SHARON CARCECCIA, Georgia College State University — We are continuing our work from last year of developing cost-effective 3D printed scintillators. There are various methods for manufacturing scintillators, but unfortunately many of these methods involve the costly machining of crystal materials. We plan to reduce this cost by attempting to manufacture plastic scintillators using a 3D printer. The challenges of this project are in printing completely transparent objects and successfully integrating an organic, scintillating molecule into plastic (T-Glase, a type of PET). We have had success in printing with PET filament, the same polyester used in disposable plastic bottles. Upon successful clear prints and efficient chemical doping of PET plastic with naphthalene, we intend to use recycled water bottles to manufacture our own scintillating fiber.

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