

Abstract Submitted  
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**Mechanisms of Laser Induced Modification of Lead and Barium Vanadate Glasses**<sup>1</sup> MARIO AFFATIGATO, RUHIL DONGOL, LANDON TWEETON, CORY FARIS, STEVE FELLER, Coe College — We report on our investigations on the mechanisms for structural and morphological change in lead and barium vanadate glasses modified by 785 nm laser irradiation. The fundamental process is thermal in nature, leading to phase decomposition, phase changes, and mass transport in the center of the irradiated region, as well as the formation of lead- or barium-rich debris zones. Crystallization is also a consequence of the exposure to the laser light. We further report on pre-irradiation experiments in which low-power exposure above a determined energy threshold results in structural changes that bridge the gap between the amorphous state and the ultimate crystalline arrangement. Finally, we discuss the application of the laser irradiation in the making of vanadate microspheres.

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