

Abstract Submitted  
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**Raman and Infrared Absorption Study of Indigoid-based Pigments**<sup>1</sup> FELICIA MANCIU, WILLIAM DURRER, LAYRA REZA, Department of Physics, ALEJANDRA RAMIREZ, RUSSELL CHIANELLI, Materials Research and Technology Institute, The University of Texas at El Paso, El Paso, Texas 79968 — A fascinating aspect of *Maya pigments* is that despite the environmentally harsh humidity and high temperatures they resist fading and they have unprecedented stability. In this investigation, we address the question of how organic dye binds to inorganic palygorskite to form pigments. Our analysis by Raman and infrared absorption spectroscopies proves that different processes are taking place for the indigo-palygorskite system as compared with the thioindigo-palygorskite complex. While partial elimination of the selection rules for the centrosymmetric indigo and disappearance of the indigo N-H bonding, with conversion to dehydroindigo, is observed for the first compound, the latter shows no evident structure modification. The interaction between indigo and palygorskite is likely through oxygen and nitrogen. Only oxygen plays this role for the thioindigo-palygorskite complex.

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