

Projects for Physics 10262

Physics Methods in Art and Archaeology

- Radiography and Raman spectroscopy in the analysis of Vermeer painting techniques
- The Archimedes Palimpsest, X-ray fluorescence as a tool for deciphering ancient manuscripts
- PIXE applications in Mesoamerican pottery analysis
- Fake and forgery, scientific methods to unmask forgeries by Hans van Meegeren.
- The shroud of Turin, what are the uncertainties of ^{14}C dating
- The Vinland map, real or fake?
- The origin of man, tracing the Neanderthal man
- Piltdown Man, proof of fake?
- GPR sub-surface search techniques in archaeology
- The Alvarez experiment, cosmic ray search for hidden chamber on the Chephren pyramid.

Please send me (Wiescher.1@nd.edu) the titles of three projects of your choice listed by preference and I will make the final assignments with 4 students per project!

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Requirements for each group project:

1. 10 minute power-point presentation or overheads (last week of classes)!
2. 10 page (or more) report with first version due on October 17 - (last class before break)!

The report and presentation should contain:

- short introduction into subject
 - description of the goal of scientific investigation
 - scientific method and technique
 - results of scientific investigation
 - conclusion
 - bibliography of used material (including web addresses)
 - attached copies of most relevant material/literature used
3. Participation of each member of the group should be demonstrated!