meets **HERACLES**





July 02-06 IESL-FORTH Heraklion, Crete - Greece

Application deadline: April 18

Notice of acceptance: April 25

AIMS

The aim of OPTO-CH 2018 summer course is two-fold:

a) to introduce participants to applications of advanced laser-based technologies in Cultural Heritage (CH) science, diagnostics and conservation.

b) to inform them on the latest developments of the H2020 EU project <u>HERACLES</u> research as regards the effective resilience of Heritage monuments against climate events.

CONTENT

Lectures from experts on modern laser diagnostic and analytical techniques, as well as on laser cleaning methodologies will be combined with practical demonstrations and laboratory hands-on sessions. In parallel, experts researching on advancing the level of heritage monuments resilience (analysis and understanding of materials' degradation mechanisms, synthesis of new protective materials, insitu diagnosis and monitoring as well as ICT technologies) will present the <u>HERACLES</u> concept.

The summer course will conclude with one day of field tests and experiments on-site at the Venetian fortress of Heraklion "Rocca a Mare".



* Photonics for CHI CULTURAL HERITAGE





OPTO-CH 2018 meets **HERACLES EU project**

July 02-06, 2018

IESL-FORTH, Heraklion, Crete, Greece

Join us for an exciting journey to Crete to become acquainted with the latest developments on non-invasive optical technologies and explore their field applications in Cultural Heritage research and conservation with emphasis to resilience against climate events

What Does it Cover?

OPTO-CH 2018 training workshop combines lectures from experts on modern laser diagnostic and analytical techniques, as well as, laser conservation methodologies, with practical demonstrations and laboratory hands-on sessions. Two days of field tests and experiments on-site at selected monuments in Crete are also foreseen. The topics covered include:

- Materials analysis with Laser Spectroscopy (LIBS, Raman, DR)
- Optical Coherence Metrology for Structural Diagnosis
- Imaging and Mapping; multispectral, photo-acoustic and THz
- Laser Cleaning.

Furthermore, the basic concepts and research conducted so far within the H2020 EU project <u>HERACLES</u> will be presented with emphasis to the safeguarding of CH monuments from the effects of the Climatic Change. The summer course will conclude with field tests and experiments on-site at the Venetian fortress of "Rocca a Mare" in the port of Heraklion, one of the HERACLES test-beds

Who Should Attend?

- ✓ Graduate students (or Undergraduate Seniors)
- ✓ Young Researchers in Cultural Heritage and Conservation Science
- ✓ Professionals in Cultural Heritage

www.optoch2018HERACLES.iesl.forth.gr

Applications deadline **April 18, 2018**

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Certificates of attendance will be given to all participants







WORKSHOP'S OUTLINE

	Days 1-3	Intro, Basics and Lab sessions
	DAY 1	Historic, cultural and monumental context. Conservation considerations in Cultural Heritage re- search. Materials context.
		Optics and Imaging (the seen and the unseen), Basic optics and imaging physics, Multi-spectral imaging, Case studies
		Participants presentations
	DAY 2	Laboratory and Laser Safety
		Holographic interferometry, Holography and interferometry basics, Case studies, Practical session.
		Photoacoustic and THz Imaging, Basic principles and case studies
		Laser conservation, Basics of laser ablation removal of materials, Case studies
		Practical sessions and hands-on demos.
2	DAY 3	Laser Spectroscopy for material analysis
3	(morning)	Elemental Analysis by LIBS, LIBS basics, Case studies, Practical session.
2		Molecular Analysis by Raman microscopy, Raman basics, Case studies, Practical session.
R	Days 3-5	HERACLES
	DAY 3	Conservation and restoration works in the Palace of Knossos: the previous interventions and the recent strate-
	(afternoon)	gies within <u>HERACLES</u>
		Guided visit at the Knossos Archaeological site
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5	DAY 4	The <u>HERACLES</u> Concept and Vision
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Ľ		Climate Change impact evaluation and risk and vulnerability analysis Analytical protocols for in-situ
		monitoring and ex-situ material analysis
		New materials for protection; the HERACLES case
		The HERACLES ICT platform
	DAY 5	On-site campaign at Rocca a Mare
		Site context, meaning and values
		Campaign planning, Dividing problems based on materials and pathologies. Assembling working groups
		Setting up of equipment and documentation workstations.
		Working on site and data interpretations.
		Campaign overview. Conclusions. What we learned.









Contact

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