UNIVERSITY OF CRETE

Department of Materials Science & Technology (MST)

Graduate Studies

23/10/2012

Staff Members

G. Armatas
M. Chatzinikolaidou
G. Fytas
M. Kafesaki
G. Kioseoglou
G. Kopidakis
A. Mitraki
D. Papazoglou
N. Pelekanos
G. Petekidis
I. Remediakis
P. Savvidis
K. Tokatlidis
M. Vamvakaki
K. Velonia
D. Vlassopoulos

N. Chronis, V. Koutsos,
A. Lyberatos, S. Tzortzakis

Director of graduate studies:

G. Kioseglou

Research Areas

Bio-materials

Velonia, Mitraki, Tokatlidis, Chatzinikolaidou

Computational materials science

Kopidakis, Remediakis, Kafesaki

Magnetic materials

Kioseoglou

Optoelectronics

Papazoglou, Pelekanos, Savvidis

Materials chemistry

Armatas, Vamvakaki

Polymer and colloid science

Fytas, Petekidis, Vlassopoulos

MST (TETY)

Administrative Personnel:

A. Skouradaki (head)
S. Kalaitzaki (in charge of graduate program)

Technical Personnel:

S. Stamatiadis, D. Stefanakis (computer center, web page)
D. Theodoridis, E. Tylianakis, E. Spanakis (labs)

MST (TETY)

MS and PhD programs in Materials Science and Technology

Areas:

Hard materials (optoelectronics, magnetic)
Soft materials (polymers, colloids)
Biomaterials and biomolecules
Computational materials science

Goal:
Solid background for successful international career
Excellence in research
First-class training in classroom and laboratory (safety)
Learn to ask questions to pursue your goals

Total number of students since 2004: 85

Degrees offered to date: 15 PhDs and 18 MS

Discontinued or dropouts: 17

Masters program -- requirements

Courses

Hard Materials

Computational Materials Science

Soft Matter

Biomaterials – Biomolecules

Specialized courses (selection)

Colloquia 2012-2013

check also other UoC depts. and FORTH

Fridays 16:00, Seminar Room third floor physics building

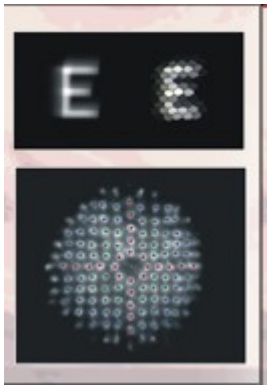
Contact: I. Remediakis (remed@materials.uoc.gr)

ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ

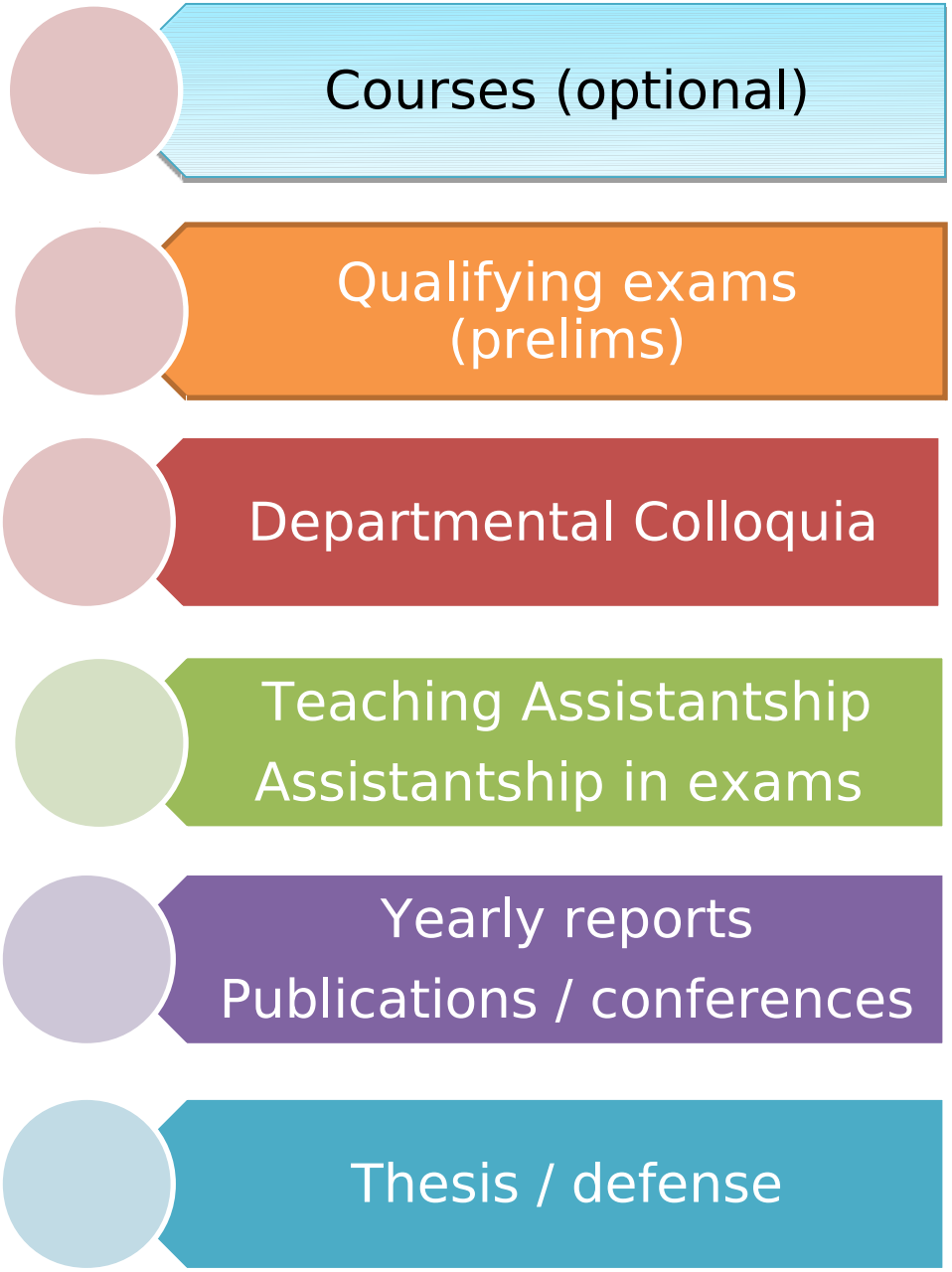
ΔΙΑΤΜΗΜΑΤΙΚΟ ΜΕΤΑΠΤΥΧΙΑΚΟ ΠΡΟΓΡΑΜΜΑ ΣΠΟΥΔΩΝ ΣΤΗΝ «ΟΠΤΙΚΗ ΚΑΙ ΟΡΑΣΗ»

MST contact: D. Papazoglou

http://optics-vision.med.uoc.gr



PhD program -- requirements



Prelims (qualifying examination)

Goal: PhD in Materials Science & Technology
(minimum grasp of materials science-technology)

Examination:
a)Presentation of thesis topic-work done/planned
b)Presentation of topic other than thesis (to be given to the candidate 2 weeks prior to exam). To be decided by the director of graduate studies.
Questions/discussion

Total time not exceeding 60 min
Successful completion of both is required.
In case of failure, a second examination is possible.

Teaching Assistantship

Labs: experiments, reports
Courses: problems

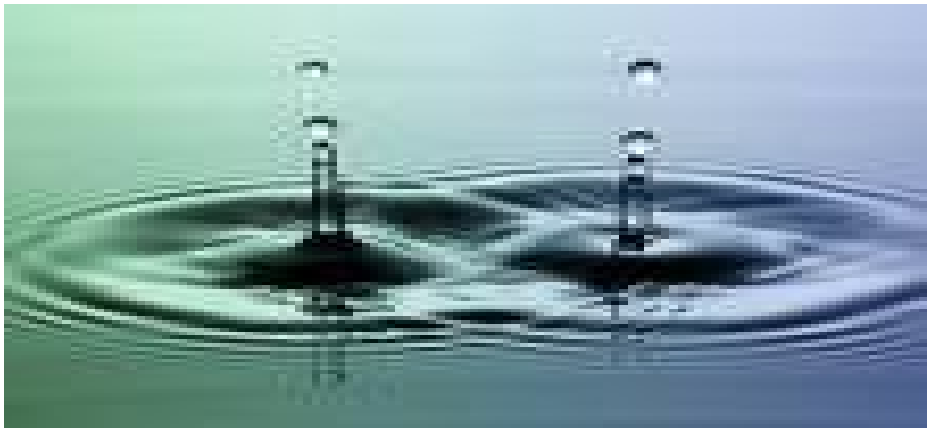
Exam supervision: January, June, September (mandatory)

ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ
ΣΧΟΛΗ ΘΕΤΙΚΩΝ ΚΑΙ ΤΕΧΝΟΛΟΓΙΚΩΝ ΕΠΙΣΤΗΜΩΝ
ΤΜΗΜΑ ΕΠΙΣΤΗΜΗΣ ΚΑΙ ΤΕΧΝΟΛΟΓΙΑΣ ΥΛΙΚΩΝ

Gerald G. Fuller

Fletcher Jones Διακεκριμένος Καθηγητής
Πανεπιστημίου Stanford ΗΠΑ
Τμήμα Χημικής Μηχανικής
Επίτιμος Διδάκτωρ Πανεπιστημίου Κρήτης

Rheology to the Rescue: Applying Complex Fluids to Solve Problems in Bio-Medicine



Τετάρτη 25 Νοεμβρίου 2009, 4 μμ
Φοιτητικό Κέντρο, Πανεπιστημιούπολη Βουτών

COLLOQUIUM OF THE DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY

Thursday, December 2nd 2010, 16:00
Amphitheater "Maria Manassaki"
Students Center, University of Crete, Voutes, Heraklion

Why we cannot make life

Prof. Bert Meijer

"*The origin of life on earth*" is without doubt one of the most intriguing scientific topics, while the wish to create life in a laboratory is amongst the most difficult challenges. The enormous progress in science and technology offers many answers to the miracles of living systems. On the one hand, we can clone sheep, grow organs from stem cells, while cells, plants, and bacteria have been modified genetically. On the other hand, the synthesis of small and large molecules has become so sophisticated that almost every molecule that exists on earth can be made in a laboratory, including long strands of DNA, proteins and complex drugs that can cure diseases. These many insights, however, also show the complexity of the molecular cell biology and as a result the astonishment over how life could originate increases. The lecture will illustrated the greatest challenges seen in the understanding of the origin of life and show that it will take very, very long before a living cell out of his individual components can be made in a laboratory. Special attention will be given to the self-organization of complex supramolecular systems, being a critical step in the building process.

E.W. "Bert" Meijer *is Distinguished University Professor in the Molecular Sciences, Professor of Organic Chemistry at the Eindhoven University of Technology and scientific director of the Institute for Complex Molecular Systems. Bert Meijer is member of many editorial advisory boards, including Chemical Communications, Angewandte Chemie and Journal of the American Chemical Society. Bert Meijer received numerous awards, including the 1999 Silver Medal of the Macro UK group, the Spinoza award in 2001, the ACS award for Polymer Chemistry in 2006, the AkzoNobel Science Award 2010 and he is member of the*

ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ
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Pawel Hawrylak

National Research Council, Canada

2013

New University Law 2011

Graduate School

Graduate studies in different programs

Basic requirements for students do not change:
study and pursue fine research work towards thesis
(courses, prelims, thesis)

Looking at the future (with optimism) ….opportunities….

Universiteit Utrecht

Some opportunities

I. Geographic

Middle East (oil, plastics industry, environment, bio) soft, theory, bio

Balkans (telecommunications, food industry) hard, bio, soft, theory

West (agricultural products) bio, soft, theory

Domestic (energy-photovoltaics, bio-materials) hard, bio, theory

Challenges

Energy (oil, hydrogen)
high-added-value technologies/products (e.g. biomedical)
Food (packaging)

Some opportunities

II. Impact of work

High-quality work is the key

Basic research is the cornerstone of civilization

Grand challenge: Make MST a center of excellence in SE Europe

Implementation

Capitalize on good start of program (positive external evaluation)

Demand more from ourselves, do not settle for less,
compare only to the top

Motivate and train our students to strive for excellence

Ingredients

Deep knowledge of field, understand the basics and details alike,
clear definition of goals: target a discrete advance, not an
incremental move forward

WORLD | EURO

Materials Science

2012

World Rank	Institution	Country	Pub/ Faculty	Citations/ Pub	Q Factor
1	University of California Santa Barbara	U.S.A.	86.6	98.8	100.0
2	Stanford University	U.S.A.	90.3	90.1	97.3
3	University of California Berkeley	U.S.A.	79.8	100.0	97.0
4	Northwestern University (McCormick)	U.S.A.	89.0	82.4	92.5
5	California Institute of Technology	U.S.A	92.6	76.5	91.2
6	University of Cambridge	U.K.	100.0	46.6	79.1
7	Leoben	Austria	80.9	59.0	75.5
8	ETH Zürich (ETHZ)	Switzerland	84.8	50.6	73.1
9	University of Illinois at Urbana-Champaign	U.S.A.	56.9	73.0	70.1
10	University of Erlangen-Nuremberg	Germany	51.1	74.9	68.0
11	Massachussetts Institute of Technology (MIT)	U.S.A.	46.2	77.0	66.5
12	Imperial College	U.K.	42.9	78.9	65.7
13	EPF Lausanne (EPFL)	Switzerland	60.0	59.8	64.6
14	Cornell University	U.S.A.	45.5	68.1	61.3
15	University of Michigan	U.S.A.	48.8	59.9	58.6
16	Georgia Institute of Technology	U.S.A.	48.6	57.8	57.4
17	University of Oxford	U.K.	47.7	54.9	55.4
18	Katholieke Universiteit Leuven	Belgium	61.9	37.1	53.4
19	University of Manchester	U.K.	63.6	35.4	53.4
20	University of Crete	Greece	28.8	70.1	53.4
21	Pennsylvania State - University Park	U.S.A	54.4	43.7	53.0
22	University of Sheffield	U.K.	61.2	31.7	50.2
23	TU Wien	Austria	36.4	34.9	38.5
24	Clausthal University of Technology	Germany	30.9	30.5	33.1
25	INSA Lyon	France	22.0	36.7	31.6
26	INP Grenoble (ISTM)	France	31.9	26.4	31.5
27	Technion Israel Institute of Technology	Israel	29.9	21.6	27.8
28	RWTH Aachen	Germany	21.5	16.5	20.5

Source: EPFL

Why pursue graduate-level studies?

A methodological approach toward creative thinking:

Formulate problem
Ask questions
Proceed to solution (combine information)