Education and Culture DG

Lifelong Learning Programme

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΥΠΟΥΡΓΕΙΟ ΠΑΙΔΕΙΑΣ
ΔΙΑ ΒΙΟΥ ΜΑΘΗΣΗΣ & ΘΡΗΣΚ/ΤΩΝ

ΙΔΡΥΜΑ ΚΡΑΤΙΚΩΝ ΥΠΟΤΡΟΦΙΩΝ
ΙΚΥ

Η εμπειρία του Τμήματος Ηλεκτρονικής απο την διοργάνωση Εντατικών Προγραμμάτων

Κων/νος Πετρίδης, *Κ. Τσίτου,*
Μιχάλης Ταταράκης και Γιάννης Καλιακάτσος

erasmus 1987 2012

Important Dates

1991: First Study Visit of Staff Members from Department of Electronics under ERASMUS Programme

1991: First Students from the Department of Electronics of T.E.I. Participating in ERASMUS Programme as Free Movers

1993: First ERASMUS-ICP (Inter-University Cooperation Programme) coordinated by the Department of Electronics

- Participating Institutions:
  - T.E.I. of Crete
  - Technical University of Crete
  - Technical University of Ilmenau (Germany)
  - University of North London (United Kingdom)
  - Ylivieska Technological Institute (Finland)

1994: Collaborating Institutions with Department of Electronics under ERASMUS-ICPs

- Technical University of Crete
- Technical University of Ilmenau (Germany)
- University of North London (United Kingdom)
- Ylivieska Technological Institute (Finland)
- Dublin Institute of Technology (Ireland)
- FachhochschuleAachen (Germany)
- TechnischeFachhochschule (TFH) – Berlin (Germany)
- Mikkeli University of Applied Sciences (Finland)
- Universidad de Valladolid (Spain)

Other departmental activities

- Participation in COMMET Project
- Short Courses under COMMET
- Curriculum Development Advance under ERASMUS
- Organization of ECTS System

Short Courses under COMMET

- Industrial Laser Applications (1993)
- Electromagnetic Compatibility (1994)
- Optical Communications (1995)
- Computer Networks (1996)

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

- **Απο το 2006** το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης συμμετέχει ενεργά στην διοργάνωση εντατικών προγραμμάτων.
- Θεματικές Ενότητες Εντατικών Προγραμμάτων:

Οπτοηλεκτρονική &Laser *(Optoelectronics, Lasers and Applications)*

Οργανικά Ηλεκτρονικά & Εφαρμογές *(Organic Electronics and Applications)*

Σπιντρονική & Εφαρμογές *(Spintronics and Applications) – Καινούργιο IP*

Αλληλεπίδραση βραχέων παλμών laser με την ύλη *(High power light matter interaction) - Καινούργιο IP*

Διαφανή Ηλεκτρονικά & Εφαρμογές *(Transparent Electronics and Applications) - Καινούργιο IP*

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

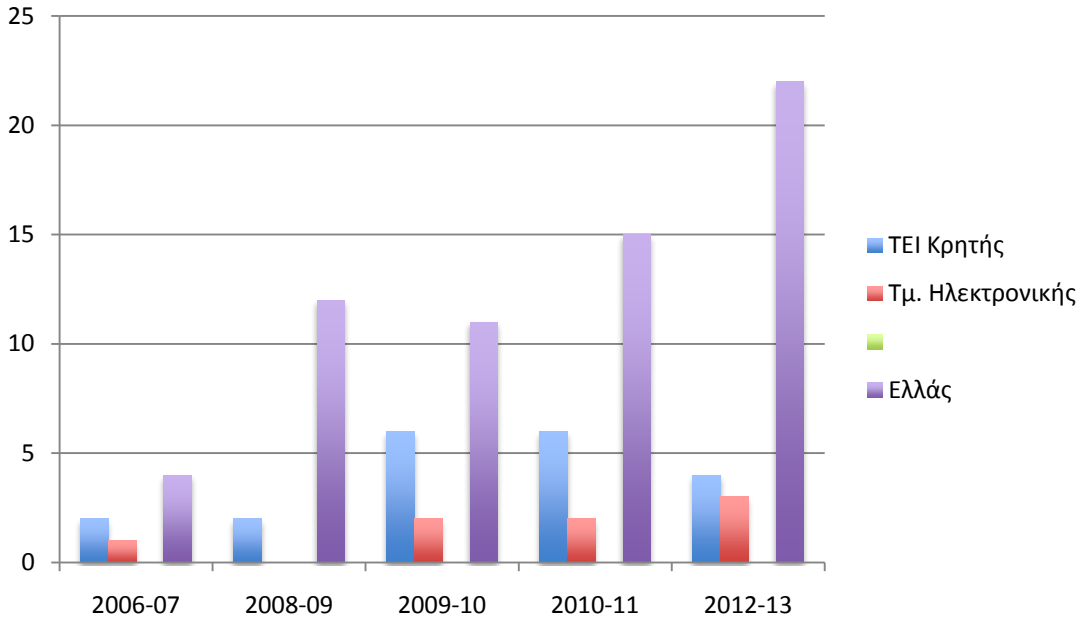
- Στα πλαίσια των εντατικών προγραμμάτων απο το 2006 - 2012:

Μετακίνηση Φοιτητών: 203 αλλοδαποί φοιτητές και 108 Έλληνες φοιτητές

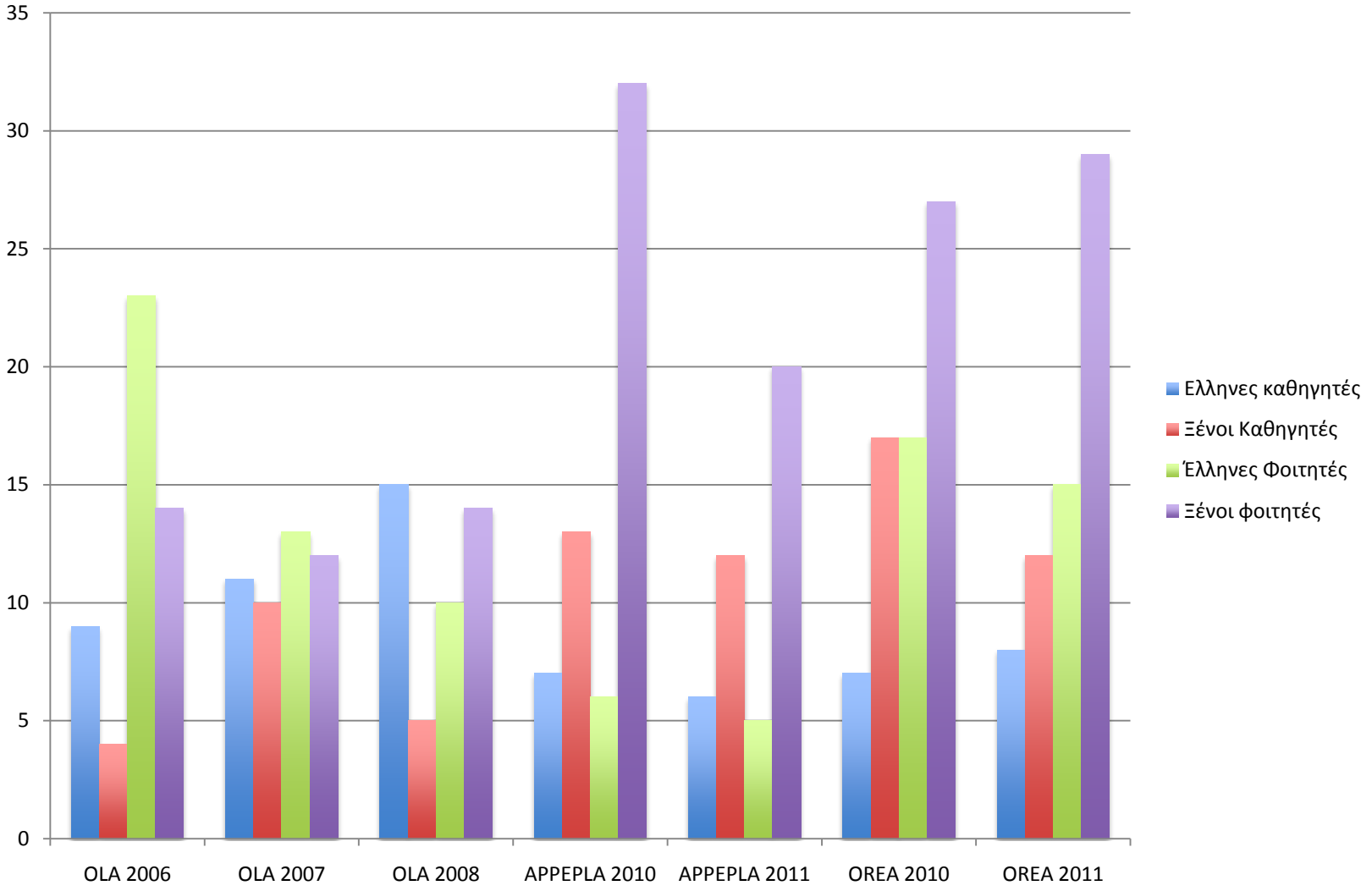
Μετακίνηση Καθηγητών: 109 αλλοδαποί καθηγητές και 71 Έλληνες καθηγητές

Συνολικός αριθμός εταίρων: 20

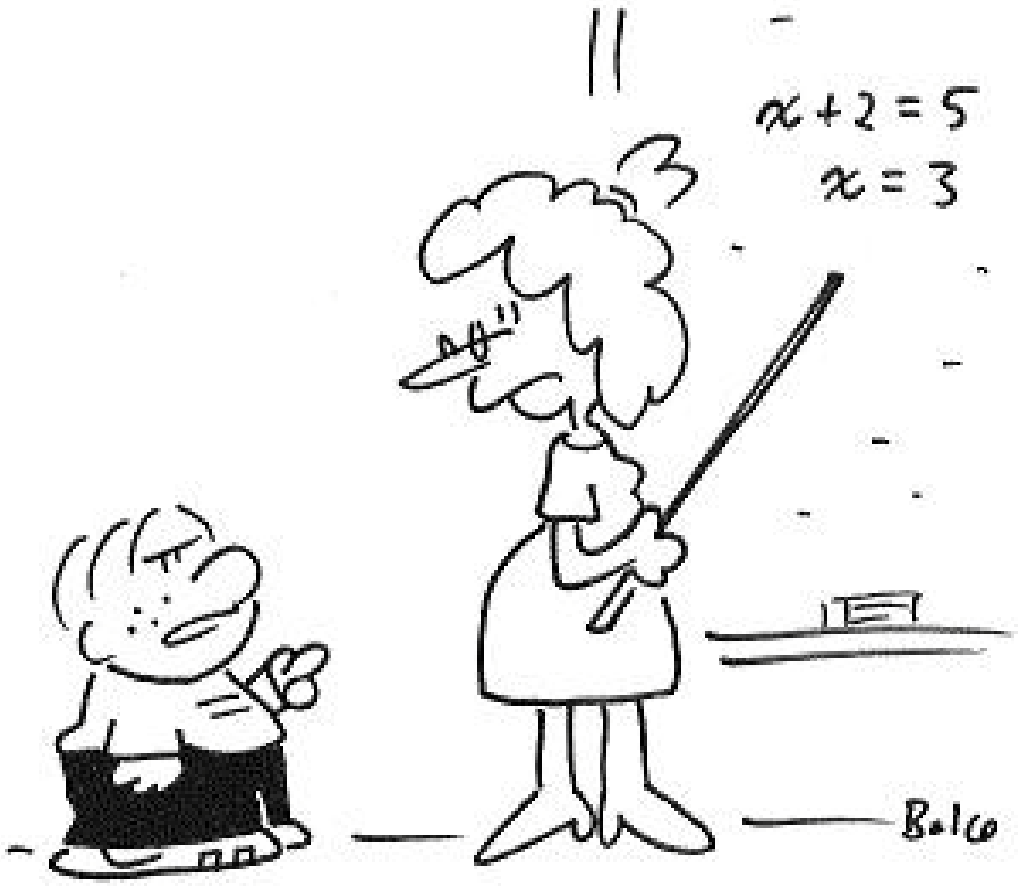
Συνολική Χρηματοδότηση: 380.000**€**



Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης



Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης



"Just a darn minute! — Yesterday you said that X equals **two**!"

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

Imperial College London

Brunel UNIVERSITY WEST LONDON

VILNIAUS UNIVERSITETAS · 1579 · UNIVERSITAS VILNENSIS

UNIVERSITAS STUDIORUM INSUBRIAE

ZÁPADOČESKÁ UNIVERZITA V PLZNI

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

- Erasmus IP: Optoelectronics, Lasers & Applications (O.L.A.):

***Διάρκεια**: 2006 – 2008*

***Website**: http://olaschool.chania.teicrete.gr/*

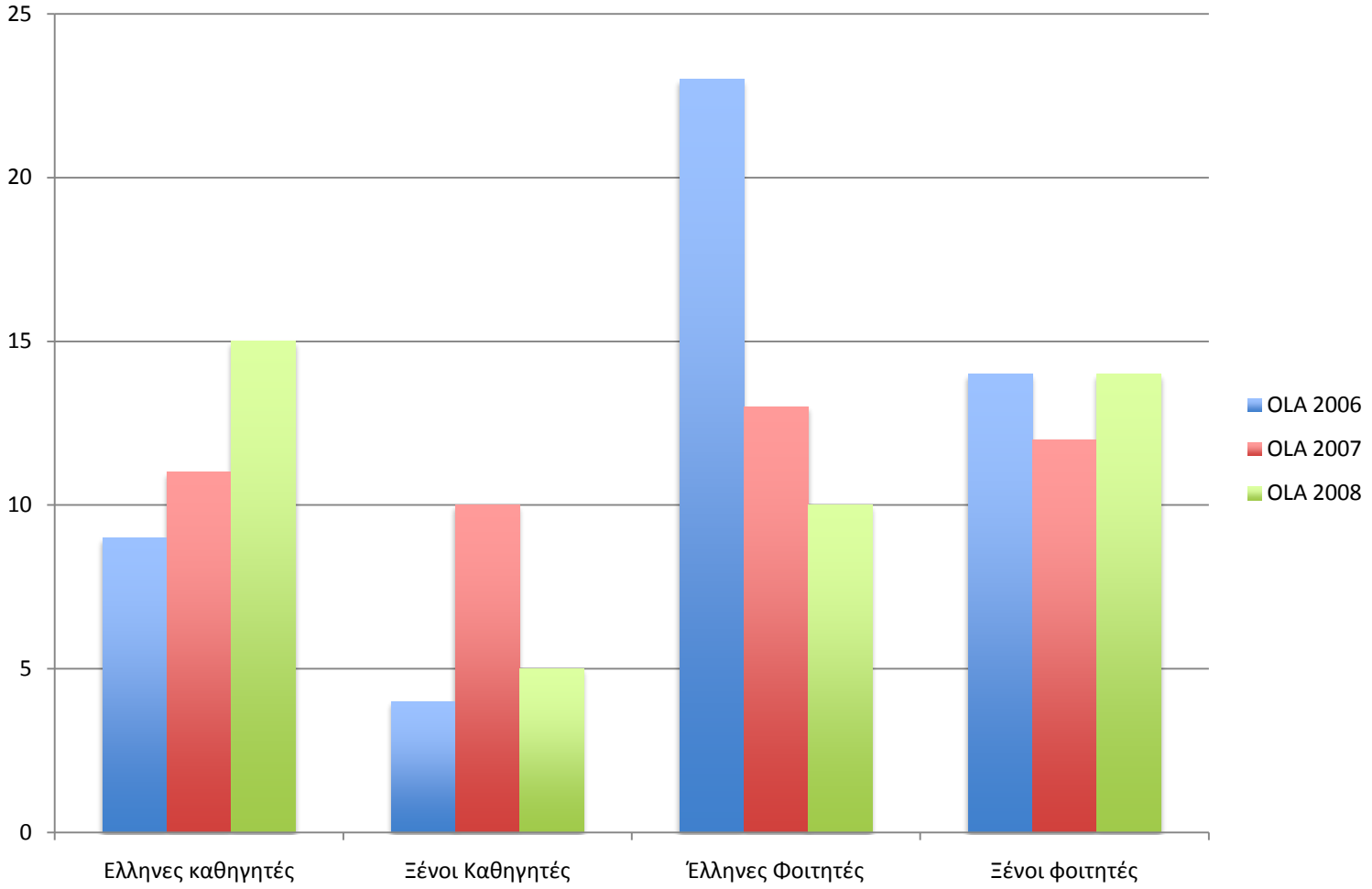
***Μετακίνηση Φοιτητών:**46 Έλληνες φοιτητές και 40 αλλοδαποί φοιτητές*

Μετακίνηση Καθηγητών:35 Έλληνες καθηγητές και 19 Ξένοι καθηγητές

Συνολικός αριθμός εταίρων:5

Συνολική Χρηματοδότηση:70154 **€**

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης



Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

- Erasmus IP: Applications of Electronics in Plasma Physics (APP.E.PLA.)

***Διάρκεια**: 2010– 2012*

***Website**: http://appepla.chania.teicrete.gr*

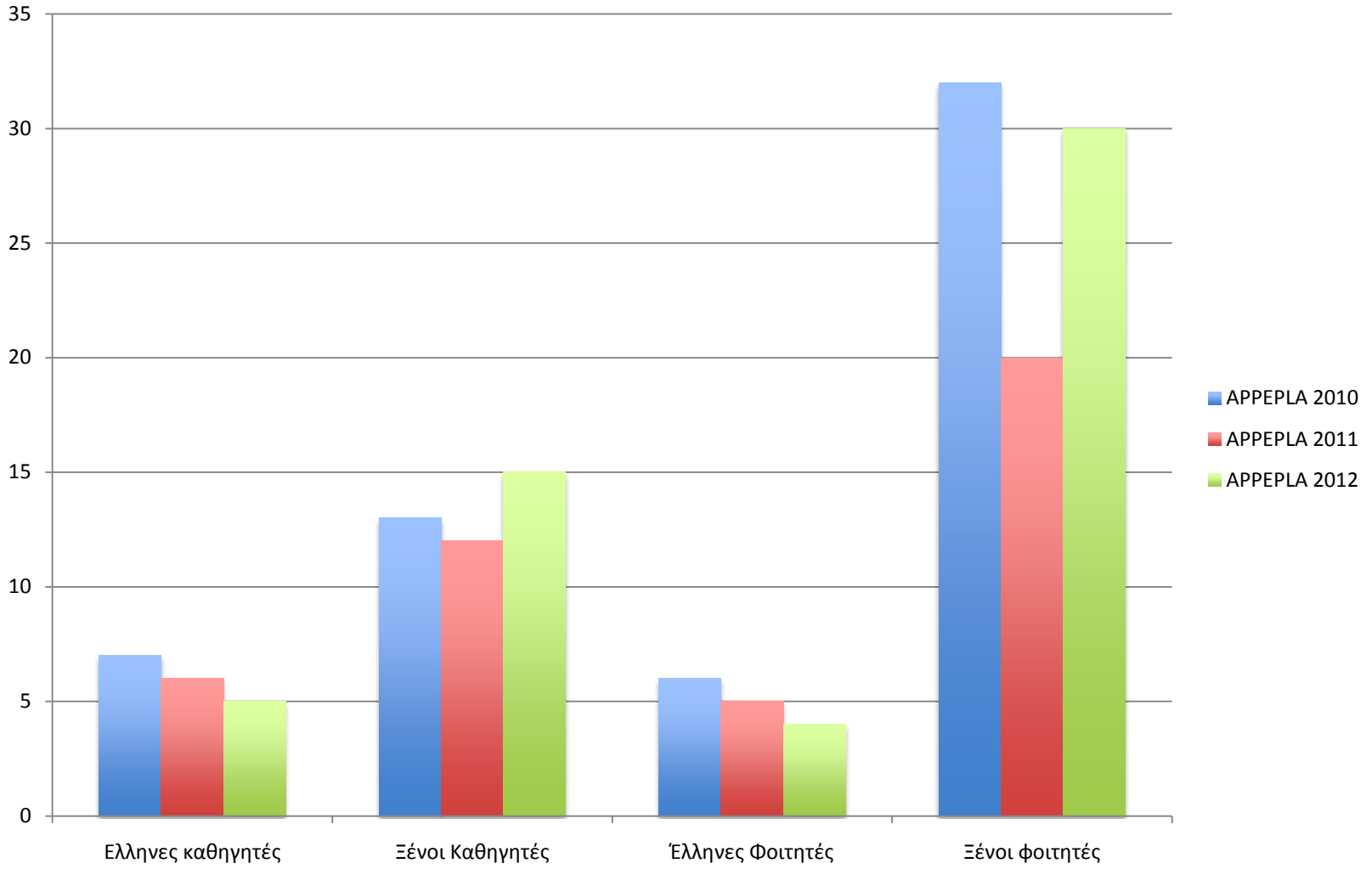
Μετακίνηση Φοιτητών:15 *Έλληνες φοιτητές και 82 αλλοδαποί φοιτητές*

Μετακίνηση Καθηγητών:18Έλληνες καθηγητές και 40 Ξένοι καθηγητές

Συνολικός αριθμός εταίρων:8

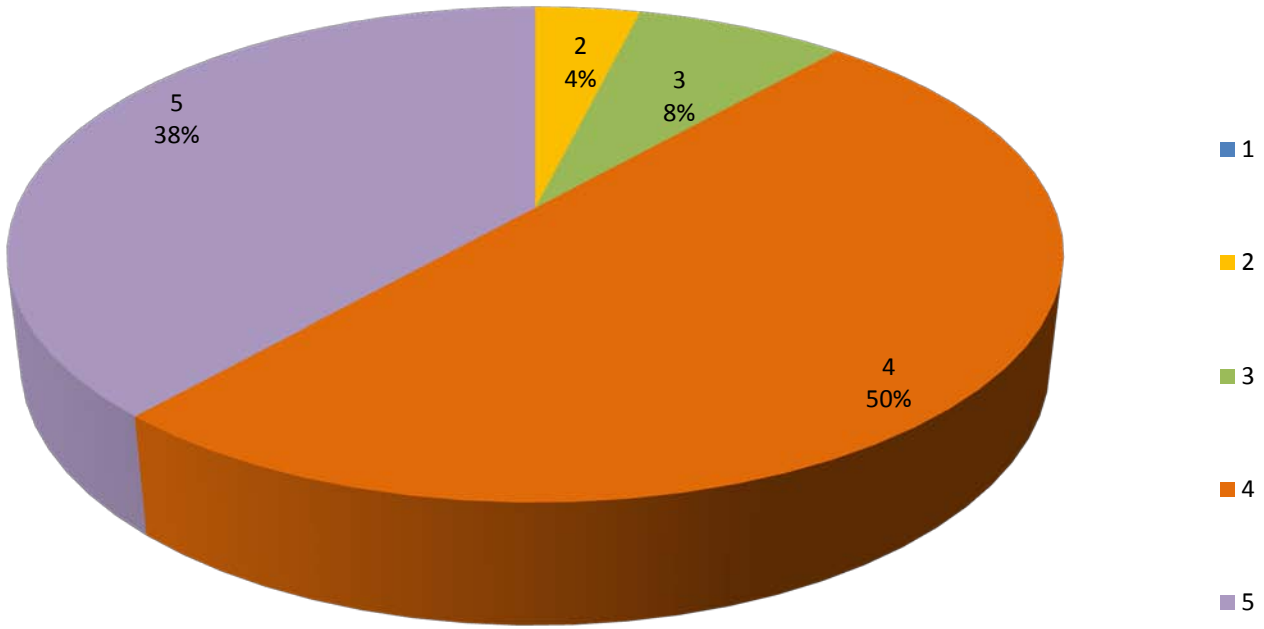
Συνολική Χρηματοδότηση: 165.344 **€**

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης



Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

Overall evaluation of the IP
scale 1-5 : 1=poor/negative, 5=excellent



Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

Education and Culture DG
Lifelong Learning Programme
EACEA
Education, Audiovisual & Culture Executive Agency

Curriculum Development Project
"PLASMA PHYSICS & APPLICATIONS" - PLAPA

Dr K. Petridis & Prof. M. Tatarakis
Department of Electronics of TEI of Crete, Chania, Greece
http://plapa.chania.teicrete.gr

PLAPA
Plasma Physics & Application

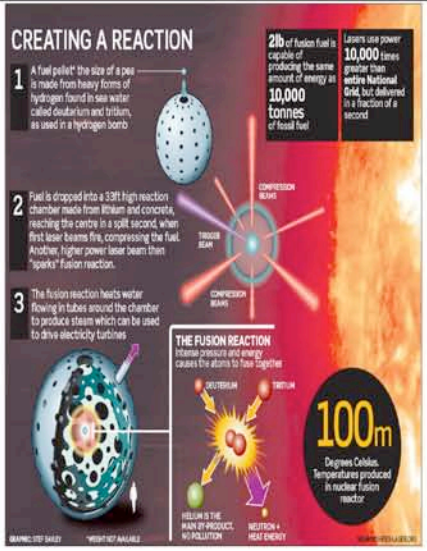
Objective

The **main objective** of this project is the development of a curriculum of courses that will lead to a joined 2 years duration European MSc degree in the field of laser driven fusion. The project is strongly related to the **Hi**gh **P**ower laser **E**nergy **R**esearch (HIPER) project.

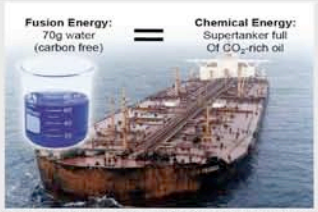
Outcome

The main target group of the PLAPA project are graduate students from Physics, Electronic Engineering, Materials Science Departments. The proposed curriculum intends to train the participants in a modern technology that promises unlimited amount of green energy for all nations.

Scientific Topic



Why consider Laser Fusion?



- ✓ The output of a fusion reaction releases a huge amount of green energy
- ✓ Provision of plentiful fuel that can meet mankind's long term needs
- ✓ Energy Security
- ✓ Safe Operation - Free of Fukushima type dangers
- ✓ It is a technology that is not a distant dream but a near term realistic goal

Curriculum Structure

1st Semester
Introduction to Plasma Physics
Electrodynamics
Principles of Scientific Computing
Research Methodologies
Quantum Mechanics

2nd Semester
Laser Physics Technology
Atomic Processes in Plasma
Plasma Diagnostics
Plasma Kinetics
Short Pedagogical Project

3rd Semester

IFP Direction
Principles of Laser Fusion
Laser Matter Interaction
Plasma Diagnostics & Beam Transport
Target Reactor Technology
Modeling & Numerical Methods

LP Direction
Principles of Laser Fusion
Laser Matter Interaction
Radiation & Laser Safety
NonLinear Optics
High Power Lasers & Diagnostics

PS Direction
Dense Plasmas
Laser Matter Interaction
NonLinear Dynamics & Instabilities in Plasmas
Modeling & Numerical Methods
Plasma Diagnostics & Beam Transport

4th Semester
MSc Thesis in one of the Partner Universities

Methods & Strategies

- ✓ 2 years duration MSc degree in laser fusion
- ✓ Use of European Credit Transfer System (120 ECTS)
- ✓ The ECTS credits are equally distributed among 4 semesters
- ✓ Use of Diploma Supplement
- ✓ Three different scientific directions: Laser Physics / Inertial Fusion Tech / Plasma Science
- ✓ The last semester is devoted to a practical project
- ✓ Development of an online educational platform
- ✓ Train future engineers in a very modern and a promising technology
- ✓ Signature of Bilateral Agreements between PLAPA partners
- ✓ Contribution to increase the student and teacher mobility across Europe
- ✓ Test the curriculum structure through teaching exchange program
- ✓ Application for an Erasmus Mundus Project

Pilot Test Events

Partners

Imperial College London
Queen's University Belfast
UNIVERSITÀ DEGLI STUDI DI MILANO BICOCCA
instn
UNIVERSITÉ BORDEAUX 1 Sciences Technologies

Contacts

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Imperial College London
Prof. Zulficar Najmudin - z.najmudin@imperial.ac.uk
Universite Bordeaux 1
Prof. Vladimir Tichonchuk - tikhon@celia.u-bordeaux1.fr
Politecnica Universidad de Madrid
Prof. Manolo Perlado - josemanuel.perlado@upm.es
Czech Technical University in Prague
Prof. Jiri Limpouch - jiri.limpouch@fjfi.cvut.cz
Queen's University Belfast
Dr Ioannis Kourakis - ioanniskourakissci@gmail.com
University of Milano - Biccoca
Prof. Giuseppe Gorini - giuseppe.gorini@unimib.it
INSTN
Prof. Guy Bonnaund - guy.bonnaud@cea.fr

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

Erasmus Intensive Program

An Introduction to Organic Electronics & Applications

Or.E.A 2010

5 – 16 July 2010 Department of Electronics TEI of Crete, Chania, Crete

The Or.E.A. 2010 topics are in the areas of :

- Organic Semiconductors Technology
- Manufacturing Processes
- Organic Semiconductor Transistors
- Organic Semiconductor Lasers
- Organic Memories
- Applications of Organic Electronics

Application deadline: 1st May 2010
Visit us on line:
http://orea2010.chania.teicrete.gr

Contact Info:
Dr Konstantinos Petridis *(TEI Crete)* c.petridis@chania.teicrete.gr
Dr Thomas Anthopoulos *(Imperial College)* thomas.anthopoulos@ic.ac.uk
Dr Henry Snaith *(Oxford University)* h.snaith1@physics.ox.ac.uk
Dr Graham Turnbull *(University of St-Andrews)* gat@st-and.ac.uk
Dr Itskos Grigorios *(University of Cyprus)* itskos@ucy.ac.cy
Dr Stelios Choulis *(Cyprus University of Technology)* Stelios.Choulis@cut.ac.cy
Dr Olle Inganas *(Linkoping University)* ois@ifm.liu.se

Organized by:

Imperial College London · Linköping University · T.E.I. of Crete

IKY · Lifelong Learning Programme

Erasmus Intensive Program ICARUS / OREA 2012
An Introduction to Organic Electronics & Applications
Department of Electronics, Technological Educational Institute of Crete
9th July - 20th July 2012
Chania, Crete, Greece
Application Deadline: 30th of May 2012
Visit us on line: http://orea2012.chania.teicrete.gr
Topics: Organic semiconductors, Organic Transistors, Organic LED, Organic Lasers, Organic Solar Cells, Hybrid Systems, Plasmonics, Graphene photonics & Twining Sessions

Organized By:

University of Oxford (UK)
Imperial College London (UK)
University of St-Andrews (UK)
The University of Sheffield (UK)
Linkoping University (SWE)
Bilkent University (TR)
University of Cyprus (CY)
Cyprus University of Technology (CY)
Technological Educational Institute of Crete (GR)

Contact:

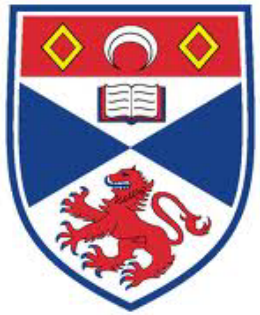
Prof. H. Snaith *(h.snaith1@physics.ox.ac.uk)*
Prof. T. Anthopoulos *(thomas.anthopoulos@ic.ac.uk)*
Prof. G. Turnbull *(gat@st-and.ac.uk)*
Prof. D. Lidzey *(d.g.lidzey@sheffield.ac.uk)*
Prof. O. Inganas *(oling@ifm.liu.se)*
Prof. H.V. Demir *(volkan@bilkent.edu.tr)*
Prof. G. Itskos *(itskos@ucy.ac.cy)*
Prof. S. Choulis *(stelios.choulis@cut.ac.cy)*
Dr K. Petridis *(c.petridischania@gmail.com)*

Sponsored by:

COSMOS · HALEPA HOTEL · Samaria · icarus

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

Imperial College London



University of St Andrews

The University Of Sheffield.

Linköping University

University of Cyprus

icarus

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

- Erasmus IP: Organic Electronics & Applications (OR.E.A.):

Διάρκεια*: 2010– 2012*

Website*:* *http://orea2012.chania.teicrete.gr*

Μετακίνηση Φοιτητών:*50 Έλληνες φοιτητές και 86 αλλοδαποί φοιτητές*

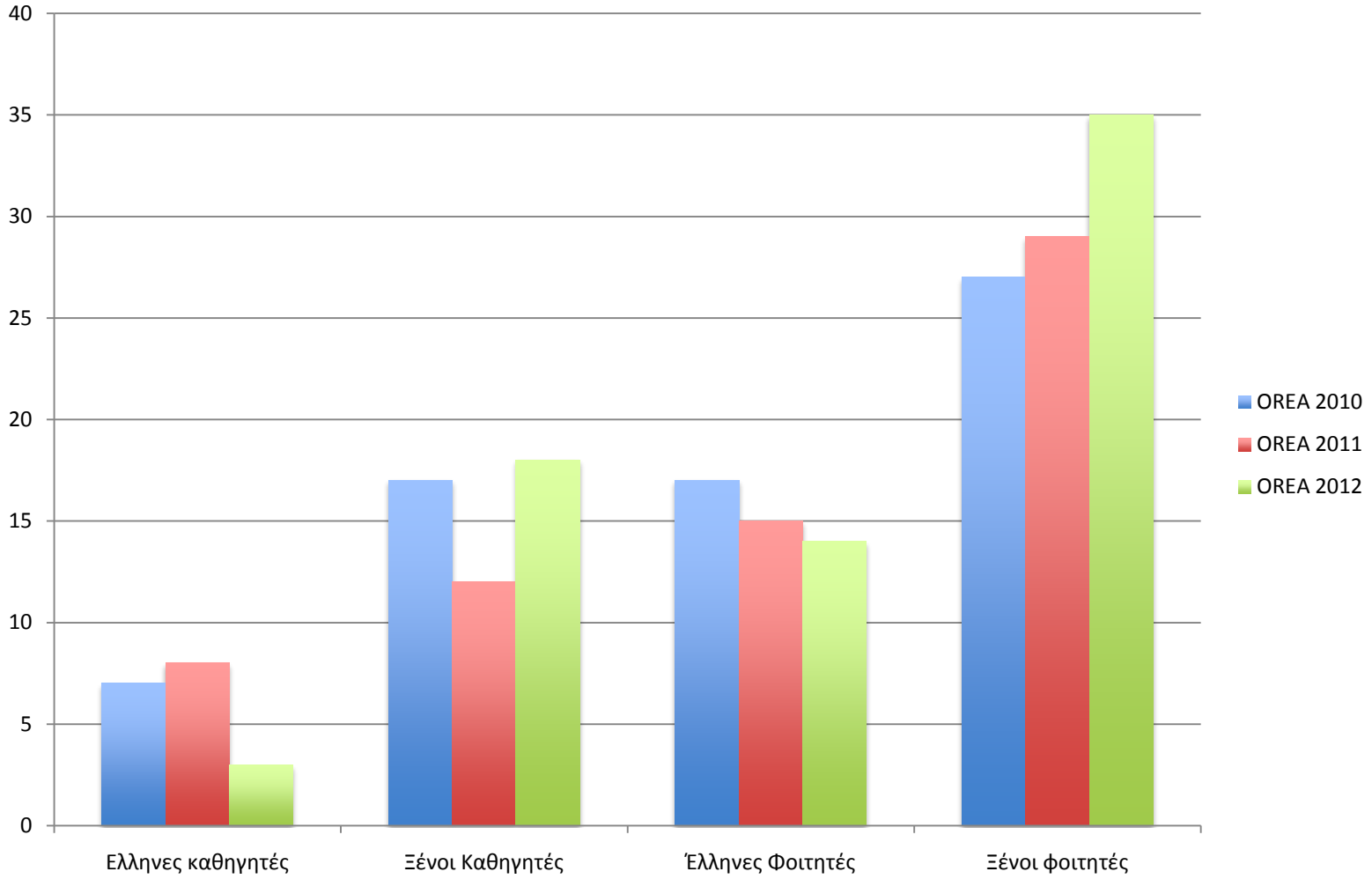
Μετακίνηση Καθηγητών:18 Έλληνες καθηγητές και 50 Ξένοι καθηγητές

Συνολικός αριθμός εταίρων:9 + 8 (Icarus) = 17

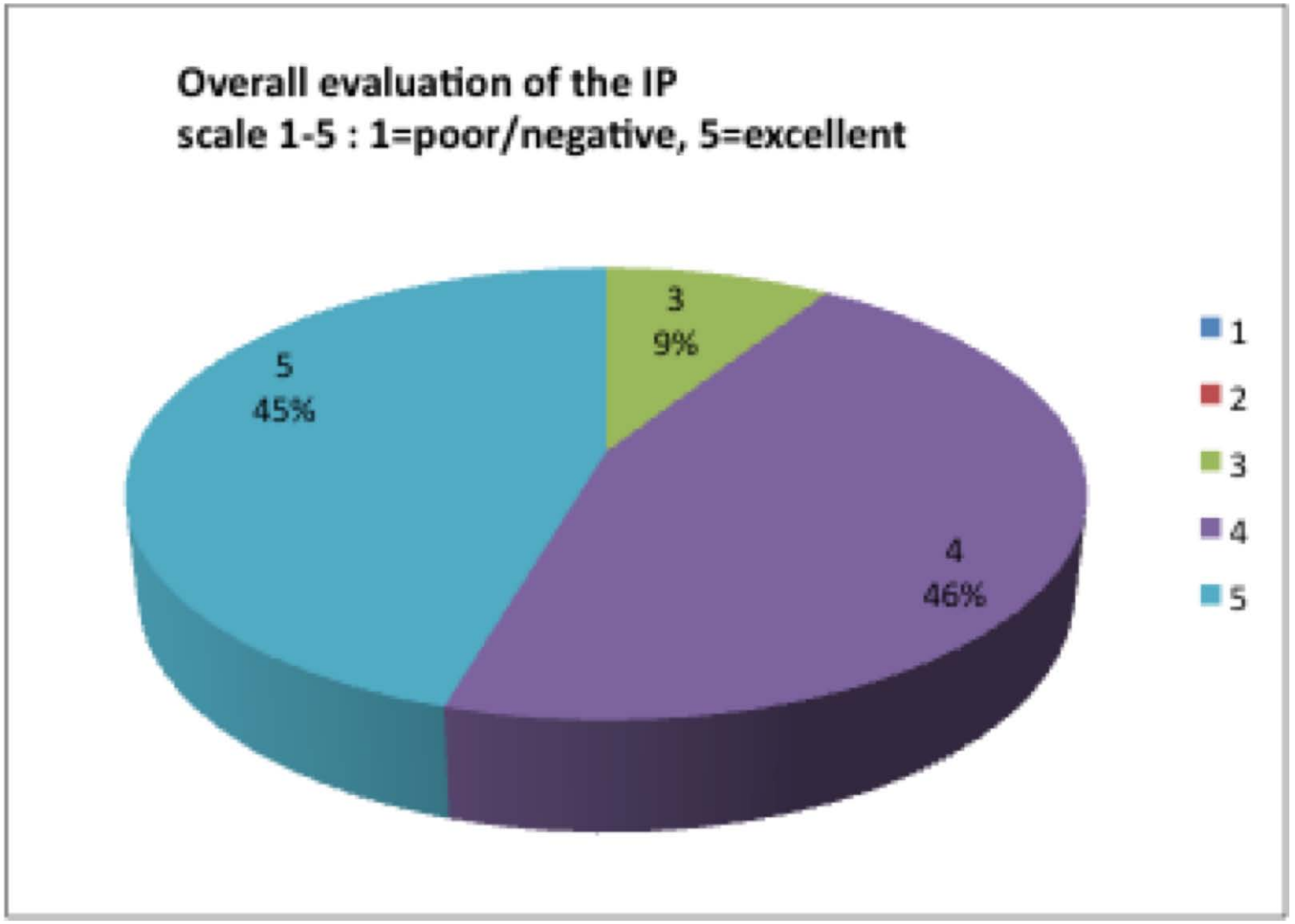
Awarded ECTS: 4 (recognized by TEIoC, St-Andrews Uni., ICL, CUT and CU)

Συνολική Χρηματοδότηση: 144.671 **€**

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης



Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης



Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

Erasmus IP Introduction to Organic Electronics & Applications (OREA)

Education and Culture DG
Lifelong Learning Programme

Dr Konstantinos Petridis[1], Mrs Caliope Tsitou[1], Dr Henry Snaith[2], Dr Thomas Anthopoulos[3], Dr Graham Turnbull[4], Dr Hilmi Volcan[5], Dr Grigorios Itskos[6], Dr Stelios Choulis[7], Dr Olle Inganas[8], Dr Manolis Kymakis[1], Dr David Lidzey[9,10], Dr Pavlos Savvidis[9] and Dr Ioannis Kaliakatsos[1]

[1] Technological Educational Institute of Crete, [2] Oxford University, [3] Imperial College London, [4] University of St-Andrews, [5] Bilkent University, [6] Cyprus University, [7] Cyprus University of Technology, [9] Icarus Project Coordinator, [8]Linkoping University, [11] Sheffield University

IP Topic & Objectives

Organic Electronics *is a relatively recent and emerging field. As such significant advances are being made from improving the fundamental operational principles to improving manufacturing technologies. Organic semiconductors have captured the interest of the electronics interest due to their interested unique properties. The solubility of the organic solvents and the color of light emission can be finely tuned via chemical synthesis. The processing methods and the low cost of fabrication of the organic semiconductors are also a reason for the recent development and progress of this technology. Organic Electronics devices include lasers, transistors, memories, solar cells. Organic electronics have met applications in Sciences, Medicine, Military, Communications and Entertainment Industry.*

Objectives of the Erasmus IP OREA

OREA is the acronym of the words: ***O****rganic* ***E****lectronics and* ***A****pplications.*

The aim of the Erasmus Intensive Program OREA is to offer an introduction to the modern technology of the Organic & Hybrid Electronics and their application. This intensive program covers the gap in the standard curricula of the partner Universities related to this topic.

Target Group:

- *Final year undergraduate students of Physics, Chemistry, Materials and Electrical Engineer Departments*
- *1st year postgraduate students that just started their research in the field of organic electronics.*
- *Minimum Requirement: Proficiency in English*

Visit us online:

http://orea2010.chania.teicrete.gr
http://orea2011.chania.teicrete.gr

The Partners & Their Role

Partners Role & Obligations

- *Provide the appropriate academic personnel.*
- *Develop a number of lectures according to the expertise that demonstrate.*
- *Advertise and Distribute the IP objectives among the academic personnel of their University.*
- *Advertise and Distribute the IP objectives among the undergraduate and postgraduate students of their University.*
- *Select and send the most appropriate students among the applicants.*
- *Actively be involved during the whole processes that take action during the implementation of the IP including the reporting period.*
- *Recognize the IP as a part of their undergraduate curriculum.*

Learning Outcomes & ECTS

Presented Themes

- *Organic Semiconductors Principles*
- *The Chemistry of Organic Materials*
- *Manufacturing Processes*
- *Organic Light Emitting Diodes*
- *Organic Lasers*
- *Organic Transistors*
- *Organic Solar Cells*
- *Organic Spintronics*
- *Organic Memories*
- *Hybrid Technologies & Systems*
- *Applications of Organic and Hybrid Systems in Medicine*
- *Applications of Organic and Hybrid Electronics in Military*

Students Workload (100 hrs)

- *66 hrs lecturing time*
- *8 hrs self – learning session*
- *3 hrs examination period*
- *23 hrs home studying & exam preparation*

Learning Outcomes

- *A general background on the operational principles of organic semiconductors*
- *A general background on the the chemistry of the organic materials*
- *Familiarity with the operational principles of organic & hybrid electronics devices*

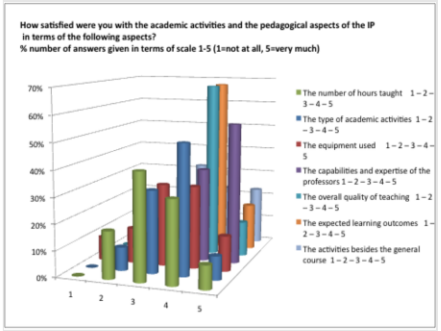
Assessment Methods

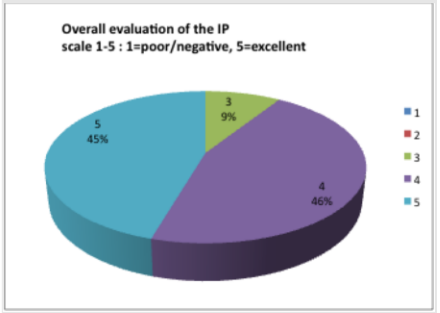
- *80% attendance in the lectures*
- *Score during the final exams > 60%*

Awarded ECTS credits

4 ECTS (1 ECTS corresponds to 25 hrs workload)

OREA IP Impact





Future Plans

- *Development of a postgraduate course in cooperation with the industry on the frame of the Erasmus project*
- *Introduce optional courses in the standard curriculum of various of the partner Universities*
- *Submission of a new IP in another technological field related to the Organic Electronics Technology*
- *Signature of bilateral Agreements between the Partner Universities*

Education and Culture
Lifelong Learning Programme
ERASMUS

Workshop 2: *IPs as a tool for curriculum development and recognition of studies*

Prof. DrKonstantinos Petridis

Department of Electronics, Technological Educational Institute of Crete, Greece

Erasmus Intensive Programmes "Mobility and Innovation in the European Context" Evaluation Conference , 22 – 23 November 2011

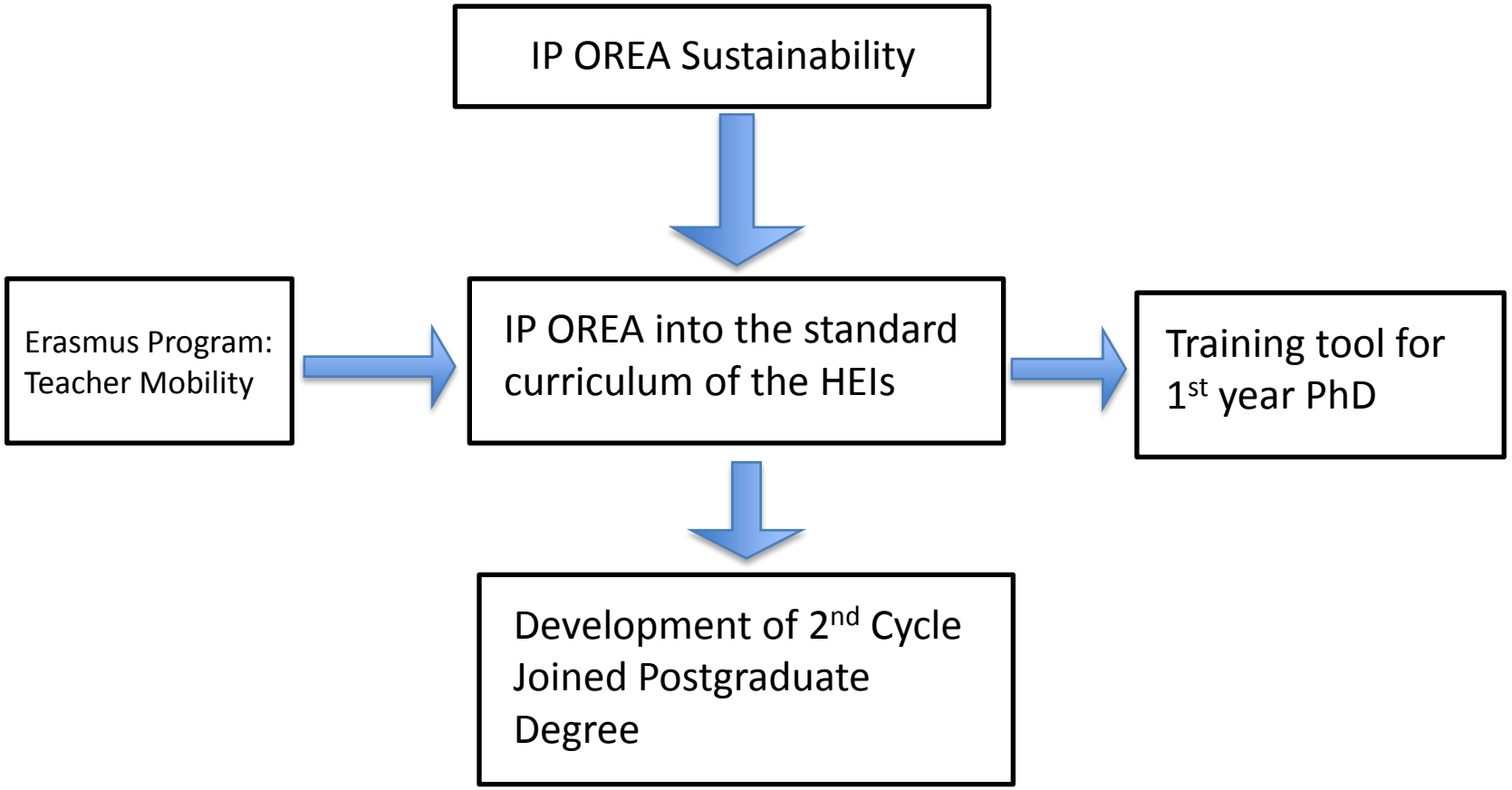
Center of Advanced European Studies and Research, Bonn

DAAD Deutscher Akademischer Austausch Dienst
German Academic Exchange Service

National Agency for EU Higher Education Cooperation

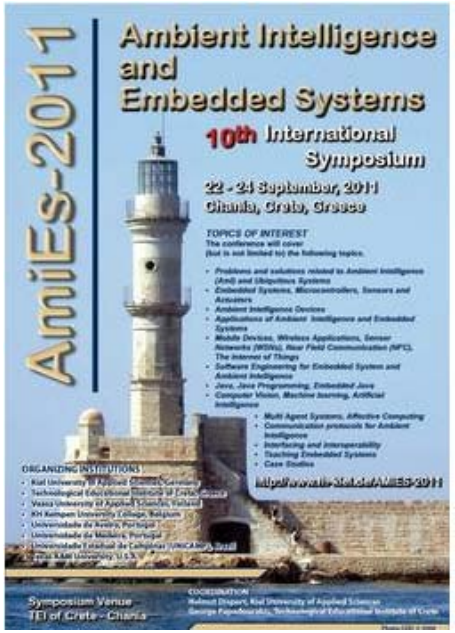
Workshop 2: *IPs as a tool for curriculum development and recognition of studies*

IP OREA Sustainability & Further Use



Workshop 2: *IPs as a tool for curriculum development and recognition of studies*

IP OREA Dissemination



Other Dissemination events:

Welcome Day for the 1st year undergraduate students – Erasmus activities.

Results:

Great interest for participation in the organized IP's

New organized IPs by other colleagues

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

- Προστιθέμενη Αξία για το Τμήμα απο την διοργάνωση Εντατικών Προγραμμάτων:

(1) Καινούργιοι Erasmus εταίροι: 4

(2) Καινούργιοι εταίροι σε ερευνητικά προγράμματα

(3) Ενσωμάτωση νέων μαθημάτων στον οδηγό σπουδών του Τμήματος

(4) Ανάπτυξη κοινών μεταπτυχιακών προγραμμάτων με Ευρωπαίους εταίρους

(5) Διεθνοποίηση του Τμήματος

(6) Ανταλλαγή μεθόδων εκπαίδευσης και πολιτισμικές ανταλλαγές

(7) Ενοποίηση του Ευρωπαικού Εκπαιδευτικού Συστήματος (ECTS & Diploma Supplement)

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

TECHNOLOGICAL EDUCATIONAL INSTITUTE OF CRETE
Department of Electronics
3 Romanou St, Chalepa – 73133 Chania - GREECE
tel: 2821 0 23038, fax: 2821023011, http://www.chania.teicrete.gr

ERASMUS INTENSIVE PROGRAMME 2011
"An Introduction to Organic Electronics & Applications"
OREA 04 - 15 July 2011

Education and Culture DG
Lifelong Learning Programme

PARTICIPATION CERTIFICATE

*This is to certify that **Mr Achilleas Savva** attended the ERASMUS Intensive Programme "An Introduction to Organic Electronics & Applications", held during 04 July - 15 July 2011, in Chania - Crete and organized by the Department of Electronics of the Technological Educational Institute of Crete.*

The Scientific Coordinator of the Intensive Programme

Dr. Konstantinos Petridis
Lecturer
Department of Electronics
TEI of Crete

TECHNOLOGICAL EDUCATIONAL INSTITUTE OF CRETE
Department of Electronics
3 Romanou St, Chalepa – 73133 Chania - GREECE
tel: 2821 0 23038, fax: 2821023011, http://www.chania.teicrete.gr

ERASMUS INTENSIVE PROGRAMME 2011
"An Introduction to Organic Electronics & Applications"
OREA 04 - 15 July 2011

Education and Culture DG
Lifelong Learning Programme

ECTS CREDITS CERTIFICATE

*This is to certify that **Mr Achilleas Savva has been awarded 4 ECTS Credits in the topic of Organic Electronics & Applications,** in the context of his successful attendance of OREA ERASMUS Intensive Programme 2011, held during 04 July - 15 July 2011, in the Electronics Department of T.E.I. of Crete, in Chania.*

The Scientific Coordinator of the Intensive Programme

Dr. Constantinos Petridis
Lecturer
Department of Electronics
TEI of Crete

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

- **Για την περίοδο 2012 – 13** τρία καινούργια Εντατικά προγράμματα εγκρίθηκαν:

(1) Spintronics& Applications (συντονιστής: Δρ Κ. Πετρίδης)

(2) Transparent Electronics: From materials and devices to circuits and systems

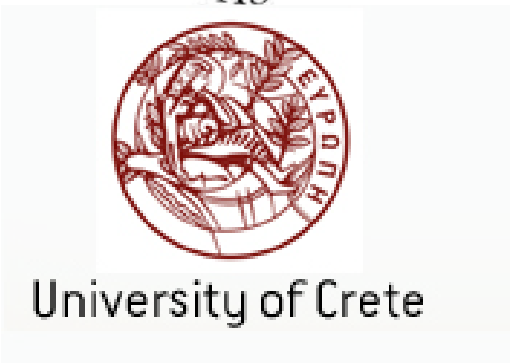
(συντονιστής: Καθ. Ι. Καλιακάτσος)

(3) An Introduction to high power light – matter interactions

(συντονιστής: Καθ. Μ. Ταταράκης)

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

- **Spintronics& Applications Partners**



Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

- ***Transparent Electronics: From materials and devices to circuits and systems***

Imperial College London

FAU
FRIEDRICH-ALEXANDER
UNIVERSITÄT
ERLANGEN-NÜRNBERG

Ecole Nationale Supérieure des Mines
SAINT-ETIENNE


Transparent Electronics:
"From Materials and Devices to Circuits and Systems"
An ERASMUS-IP programme
July 2013, Chania Crete
www.teicrete.gr/transelect

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

- **An Introduction to high power light matter interactions:**

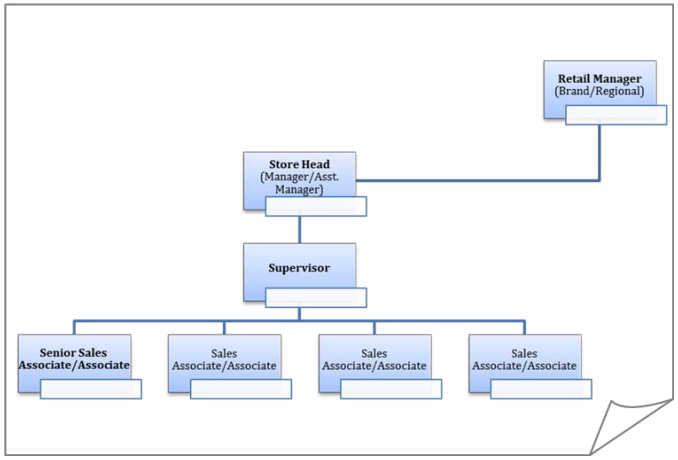
Imperial College London

THE UNIVERSITY of York

SAPIENZA
UNIVERSITÀ DI ROMA

Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

- **Recipes for good organization:**



Intensive Programs και το Τμήμα Ηλεκτρονικής του ΤΕΙ Κρήτης

Σας ευχαριστώ πολύ για την προσοχή και την υπομονή σας