

ANNEX II

Academic Ranking of Universities 2014

SCIMAGO WORLD RANKINGS 2014

University of Lisbon	122
University of Porto	216
University of Coimbra	448

SHANGHAI WORLD RANKINGS 2014

University of Lisbon	201 - 300
University of Porto	301 - 400
University of Coimbra	401 - 500

SHANGHAI EUROPEAN RANKINGS 2014

University of Lisbon	76 - 100
University of Porto	151 - 200

SHANGHAI EUROPEAN ENGINEERING RANKINGS 2014

University of Lisbon	15
University of Porto	34

Academic Ranking of European Universities in Engineering – Shangai 2014

- 1.Imperial College**
- 2.University of Cambridge**
- 3.Swiss federal Institute Lausanne**
- 4.Pierre and Marie Curie University**
- 5.Swiss Federal Institute Zurich**
- 6.Technical University of Denmark**
- 7.Eindhoven University of Technology**
- 8.KU Leuven**
- 9.Technical University Munich**
- 10.University of Bristol**
- 11.University of Oxford**
- 12.University of Southampton**
- 13-19 University of Lisbon (Aalborg, Linkoping, Milan, Royal Institute of Technology, Manchester, University College London)**
- 34. University of Porto**

Engineering

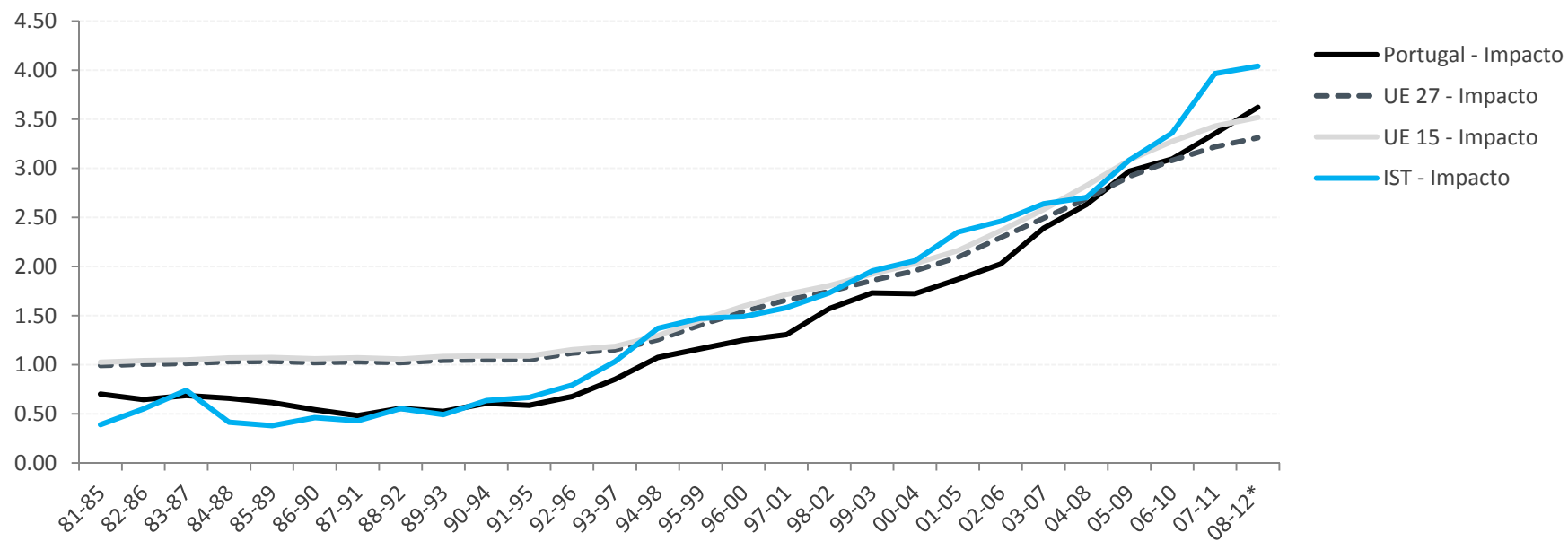
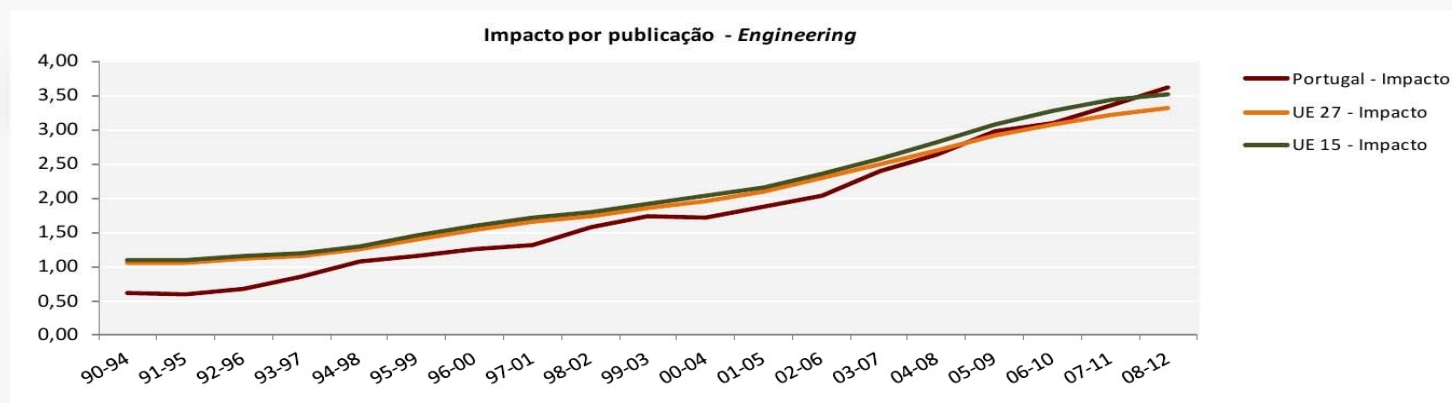


Gráfico 19

Produção Científica indexada na Web of Science (artigos, revisões e notas) - Impacto por publicação

Engineering



Dados extraídos pela DGEEC da fonte:

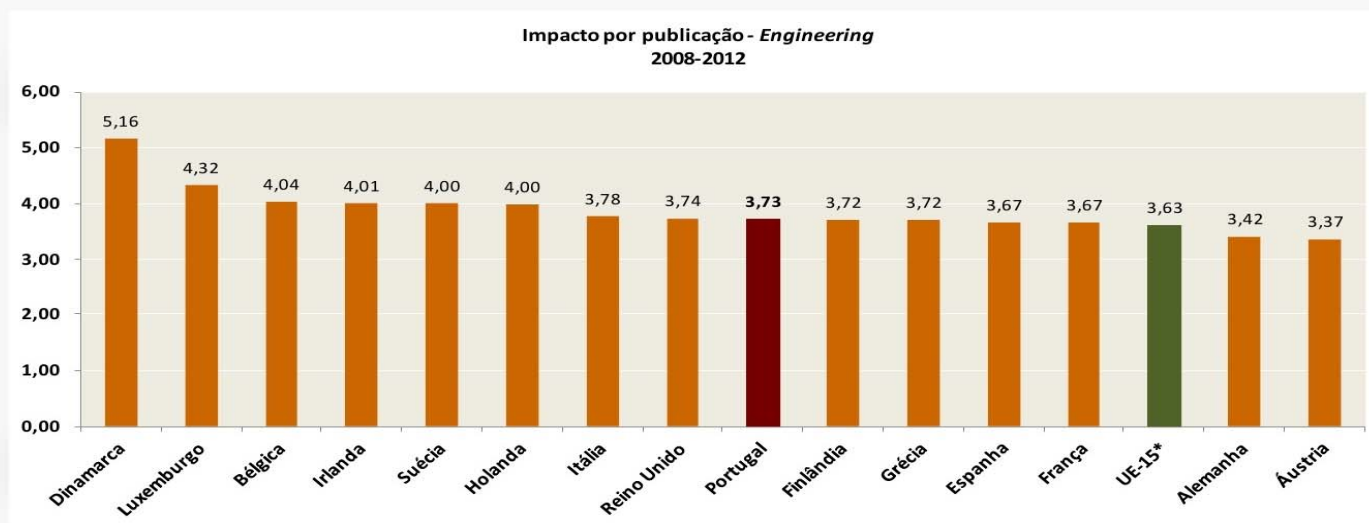
InCites™, Thomson Reuters (2012) - Módulo Global Comparisons (inclui *articles*, *notes* e *reviews*). Última atualização a 3 de julho 2013

Nota: Impacto médio por publicação obtém-se dividindo o número total de citações na área e no quinquénio pelo número de publicações na mesma área e no mesmo quinquénio.

Gráfico 20

Produção Científica indexada na Web of Science (artigos, revisões e notas) no quinquénio 2008-2012 - Impacto por país da UE-15 e por área científica

Engineering



Dados extraídos pela DGEEC da fonte:

InCites™, Thomson Reuters (2012) - Módulo Global Comparisons (inclui *articles*, *notes* e *reviews*). Última atualização a 3 de julho 2013

Nota: Impacto médio por publicação obtém-se dividindo o número total de citações na área e no quinquénio pelo número de publicações na mesma área e no mesmo quinquénio.

*Observe-se que o impacto do agregado UE-15 não é calculado como a média aritmética dos impactos individuais dos vários países. É calculado contabilizando a totalidade das publicações produzidas (e das citações recebidas) na UE-15 como um todo, como se tratasse de um só país (ver [nota metodológica](#)).

Top Publications - Mechanical Engineering

Publication	h5-index	h5-median
1 Composite Structures	49	60
2 International Journal of Solids and Structures	40	51
3 Journal of the mechanics and physics of solids	38	52
4 Wear	38	44
5 Mechanism and Machine Theory	36	45
6 Tribology International	34	42
7 Journal of Mechanical Design	31	45
8 Journal of Turbomachinery	30	37
9 Tribology Letters	29	35
10 International Journal of Engineering Science	28	41
11 Journal of Engineering for Gas Turbines and Power	28	37
12 International Journal of Mechanical Sciences	27	36
13 European Journal of Mechanics-A/Solids	27	33
14 Mechanics Research Communications	26	35
15 International Journal of Fracture	25	31
16 Vehicle System Dynamics	24	30
17 Acta Mechanica	24	28
18 Meccanica	23	30
19 Multibody System Dynamics	23	30
20 Journal of Vibration and Acoustics	22	31

Panel comment "Production rate per IR of 2 per year appears ambitious"

2008	2009	2010	2011	2012	2013
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2015	2016	2017	2018	2019	2020
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Papers in ISI/Scopus Journals	258	312	292	297	232	498
Integrated Research (IR)	225	230	232	240	230	227
Papers / IR	1.1	1.4	1.3	1.2	1.0	2.2
Papers / IR	1.2					

	364	372	382	405	416	426
	253	253	253	253	253	253
	1.4	1.5	1.5	1.6	1.6	1.7
	1.6					

Overall Budget 2015-2020

Description	2015	2016	2017	2018	2019	2020	Total (€)	%
Human Resources	1.233.440	1.293.998	1.353.174	1.413.144	1.473.517	1.535.934	8.303.207	50%
Missions	256.140	261.663	267.655	273.221	279.302	285.914	1.623.895	10%
Consultants	12.000	12.500	13.028	13.528	14.050	14.050	79.156	0,5%
Service Procurement and Acquisitions	246.200	251.508	257.284	262.699	268.254	274.784	1.560.729	9,5%
Patent Registration	6.950	7.050	7.169	7.269	7.400	7.900	43.738	0,3%
Adaptation of Buildings and Facilities	30.930	32.017	33.158	34.252	35.400	39.002	204.759	1,2%
Overheads	416.000	431.833	449.500	465.000	482.667	498.333	2.743.333	16,6%
Equipment	298.340	309.431	319.032	330.887	339.410	344.083	1.941.183	12%
Total (€)	2.500.000	2.600.000	2.700.000	2.800.000	2.900.000	3.000.000	16.500.000	

2014 Admission Students Grades

Integrated Msc. Course	University	Number of Students	Lowest grade (out of 20)
Aerospace	Lisbon	80	18.00 (Top 3)
Industrial	Porto	70	17.75 (Top 8)
Biomedical	Lisbon	60	17.43
Mechanical	Porto	145	16.55
Biomedical	Coimbra	55	16.18
Mechanical	Lisbon	165	15.93
Aeronautical	Beira Interior	40	14.88
Mechanical	Coimbra	94	12.55

	Eng. Civil	Eng. Mec.	Eng. Elec
Número de unidades com pelo menos 15 “publications per FTE	3	5	9
Número de unidades com pelo menos 18 “publications per FTE	1	2	8
Número de unidades com pelo menos 60 citations per FTE	3	10	4
Número de unidades com pelo menos 70 citations per FTE	1	7	7
Número de unidades com h-index superior a 15	3	7	7
Número de unidades com publicações no grupo “top 1% most cited”	0	5	2
Número total de publicações no grupo “top 1% most cited”	0	32	30

List of LAETA International Patents-I

1. A.F. de O. Falcão and L.M.C. Gato, J.C.C. Henriques, Air turbine for applications in wave energy conversion, Pedido de patente internacional da patente portuguesa PT106943, Data de prioridade 16/05/2013.

N.C. Batista, Rui Melício, J.P.S. Catalão, "*Vertical axis turbine blades with adjustable form*", Patent US 2012/0163976 A1, June 2012.

3. A.F. de O. Falcão and L.M.C. Gato, Turbine with radial inlet and outlet flow rotor for use in bi-directional flows, WIPO, International patent nº WO2011102746A2, Data de prioridade 19/02/2010, Data de publicação 25/8/2011.

4. A Oliveira, J Coimbra (CIIMAR), J F Silva, A T Marques (INEGI), Hyperbaric system for the long-term study and conservation for intermediate – and deep-depth aquatic organisms, International Patent WO 2009004589 (A2), 2009

5. J F Silva, M Portocarrero, A T Marques 'Universal cutting device for portable trimmers', Patente da Nova Zelândia nº 555255, 20010/10/18

6. A Multi-Metallic Foil Technology for Minting Medals and Coins with Two or Three Colors, PCT/PT97/00002

List of LAETA International Patents-II

7. Minting Process for Producing a Two Color Coin or Medal, United States Patent 6722012, (2004).

8. Plastic Deformation Technological Process for Production of Thin Wall Revolution Shells from Tubular Billets, PCT/PT2009/000007

9. J. F. Silva, Marco Portocarrero e A. T Marques, 'Acessório Universal de Corte para Moto Roçadoras Portáteis', pedido de PATENTE INTERNACIONAL Nº PCT/IB2006/063416, 2005

10. European Patent nº 1804566, 2011, M A P Vaz, M Arcelina Marques, Rui S Ribeiro, Patente pendente, patente portuguesa nº 104092 para "SENSOR PORTÁTIL PARA MEDIÇÃO DE FORÇAS PLANTARES EM 3D - *PORTABLE SENSOR FOR 3D PLANTAR FORCES ASSESSEMENT*", Starting: 16-12-2010, Limit: 09-06-2028

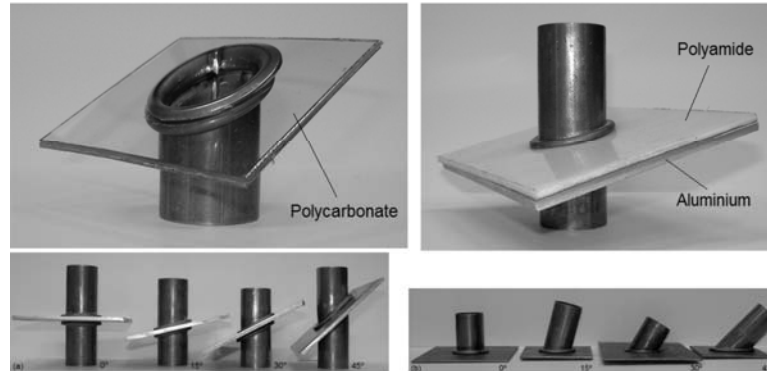
11. Braga Campos, United States patent 6705547, "On an active noise reducing nozzie", filed 2 January 2002, granted 16 March 2004.

12. Braga Campos, British patente GB 2291388B, "A fail safe towing bracket", filed 10 May 1995, granted 19 November 1997

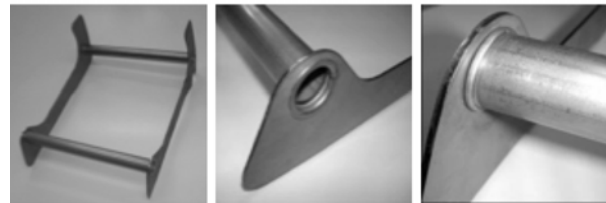
NEW MECHANICAL JOINING PROCESS FOR FIXING TUBES TO SHEETS



New mechanical joining process for fixing tubes to sheets along planes inclined with respect to the tube axis. The process is based on the capacity of producing and controlling inclined instability waves in thin-walled tubes subjected to axial compressive load and is capable of ensuring significant economic and time savings when compared to currently available joining technologies based on mechanical fixing with fasteners (nuts, bolts and rivets), welding and adhesive bonding.

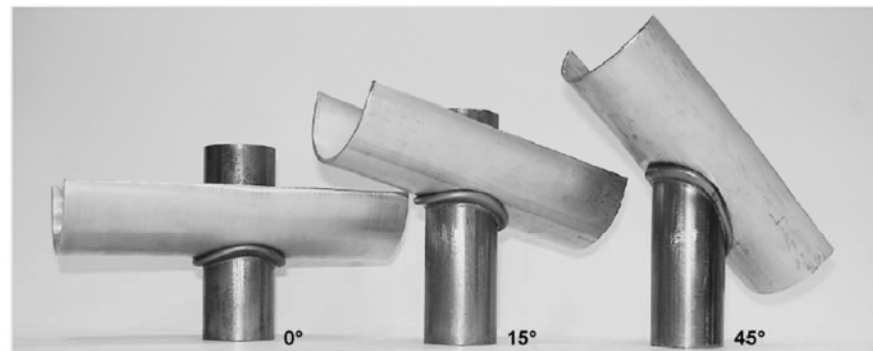
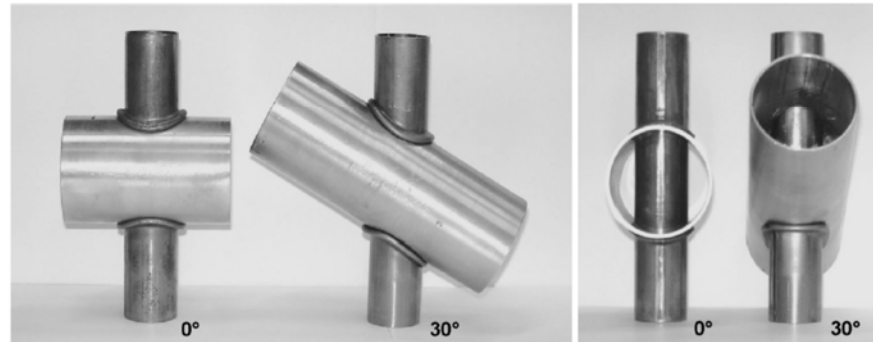


Current application: seat bottom frame of a passenger car



NEW MECHANICAL JOINING PROCESS FOR FIXING TUBES TO TUBES

The development and propagation of sound inclined, out-of-plane, plastic instability waves in thin-walled tubes subjected to axial compression is utilized to produce effective eco-friendly inclined tube attachments at room temperature.



Potential application: Frames and Lightweight tubular structures



INTERNATIONAL PATENT

Minting Process for Producing a Two Color Coin or Medal



US006722012B1

(12) **United States Patent**
Teixeira et al.

(10) Patent No.: **US 6,722,012 B1**
(45) Date of Patent: **Apr. 20, 2004**

(54) **MINTING PROCESS FOR PRODUCING A TWO COLOR COIN OR MEDAL**

5,630,288 A 5/1997 Lasset et al.
6,514,374 B1 * 2/2003 Zurawski et al. 40/27.5

(75) Inventors: **Antonio Jose do Rosario Coelho Teixeira**, Lisboa (PT); **Paulo Antonio Martins**, Parede (PT); **Paulo Jorge Leitao**, Carnaxide (PT)

FOREIGN PATENT DOCUMENTS

GB 1276272 6/1972
GB 1483700 8/1977

* cited by examiner

(73) Assignee: **Imprensa Nacional Casa da Moeda, SA**, Lisbon (PT)

Primary Examiner—Gregory Vidovich
Assistant Examiner—Jermie E. Cozart
(74) *Attorney, Agent, or Firm*—Brinks Hofer Gilson & Lione

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

ABSTRACT

(57) The invention deals with a technology for minting coins and medals. The technology is based on the utilization of metal blanks with similar diameters, one being very thin (hereafter named as the foil), joined together by mechanical means during the impartion of the surface details by the minting dies. The technology requires the design and manufacture of a special geometry in the edge of the thicker disk in order to make possible assembly of the metal blanks. The proposed technology is based on a multi-stage manufacturing process consisting of three cold metal forming operations (preforming, rimming and coining) and one intermediate annealing treatment. The first metal forming operation ensures the preforming of the thicker disk blank, hereafter named as the disk. The second metal forming stage is the rimming operation in which the preformed disk is bent along its diameter in order to generate a suitable profile for subsequent assembly with the foil. The third metal forming stage is a coining operation in which the metal blanks (disk and foil) are assembled together, by locking the foil into the rimmed edge of the disk, during the imprint of the surface details. The annealing treatment is to be performed before the coining operation. The goal is to restore the initial ductility of the disk prior to the final coining stage.

(21) Appl. No.: **09/638,988**

(22) Filed: **Aug. 15, 2000**

Related U.S. Application Data

(62) Division of application No. 09/011,360, filed as application No. PCE/P19/00002 on Feb. 10, 1997, now abandoned.

(51) **Int. Cl.** **B23P 11/00**

(52) **U.S. Cl.** **29/509; 40/27.5**

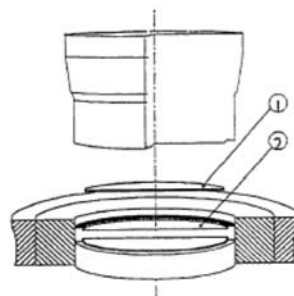
(58) **Field of Search** 29/509, 17.4; 40/1.5, 40/27.5, 661.05, 675; 428/579, 600, 609; 63/23, 34

References Cited

U.S. PATENT DOCUMENTS

29,652 A 8/1860 Malby
31,871 A 4/1861 Copeley
3,607,147 A 9/1971 Harrison
3,636,616 A 1/1972 Reming
4,003,346 A 12/1977 Simpson et al.
4,435,911 A 3/1984 Jones
4,472,891 A 9/1984 Ielpo
4,973,524 A 11/1990 Huebner et al.
5,094,922 A 3/1992 Ielpo et al.

8 Claims, 3 Drawing Sheets



List of LAETA Startups-I

1. Empresa MERCATURA-Tecnologias de Informação Ltda (<http://www.mercatura.pt/>) ;
sócios fundadores Antonio Augusto Fernandes e Paulo Tavares de Castro
2. WSBP – Professores Manuel Gameiro, José Costa e Adélio Gaspar.
3. Sciven (NIF 509 979 882), Jorge André, constituída em 26/8/2011, com actividade principal na área com CAE 71120 (Actividades de engenharia e afins).
4. Paulo Oliveira, Founding Partner of the Spin Off - BLUE EDGE / Systems Engineering, in 2003
5. PREWIND, Lda, Business: Forecasting services for the energy sector
6. PETsys – Medical PET Imaging Systems, SA, Business: Positron Emission Tomography systems
7. HPS (Portugal) – High Performance Structures, Gestão e Engenharia, Lda, Business: High performance structures for space applications
8. S&P Clever Reinforcements Iberica, Business: Production of materials for FRP strengthening of reinforced concrete structures and bituminous pavements
9. ALTO – Perfis Pultrudidos, Lda, Business: Pultruded Profiles

List of LAETA Startups-II

10. Lasindústria SA
11. SAF (sistemas de avaliação de formação)
12. EWF (formação, certificação e qualificação de pessoas e empresas em soldadura)
13. Intersys (sistemas de automação em soldadura)
14. IMPAKTBALANCE, M. Seabra Pereira
15. Icollision, João Dias, Luis Sousa, 2009
16. Quaterniao Engenharia LDA
17. Occam Lda.: Consultoria e Formação – Transportes, Energia e Ambiente
18. Kymaner: Tecnologias Energéticas, Lda., specialized in mechanical equipment for the ocean energy industry. IDMEC and Kymaner have been involved in marine-energy European projects, especially, in recent years, the CORES and the MARINET projects.
19. OPT – Optimização e Planeamento de Transportes, SA, Business: Operational Management of Transports5.

Missions and Tasks emerging from R&D at IDMEC *et al.*

Eduardo de Oliveira Fernandes



1973 – PhD: Lausanne – Brown Boveri BC **wet steam turbines**

1978 – **Retrofits of historic bldgs** for the Portuguese National Park **with solar heating**

1980 – **1st International Congress** on Building Energy Management (360 attendants)

1984 – **1st Passive Solar House** in Portugal

1990 – **1st Building's Thermal Regulations** for Portugal

1987-1991 – **Executive Vice President of PLEA** – Passive and Low Energy Architecture

1991-1995 – **Vice President of ISES** – International Solar Energy Society

1996 – **2nd Building's Thermal Regulations** for Portugal

1996 – Promotion of intl competition, construction and monitoring of block of **passive social housing of 16 apartments at Vila do Conde**

1995-1997 – **President of ISES** – International Solar Energy Society

1986-1992 – **Expert for Energy in Buildings at DG Research (DGXII)**

1993-1998 – **Energy concept** and leadership of the overall **Urban Energy Project of EXPO'98** (30-40000 inhabitants)

2000 onwards – **Consultant** to several cities in Europe (Italy, France and EC sustainable cities project) for **energy in cities**

2001 – President of the Advisory Council of the **Lisboa Energy Agency**

2001-2002 – **Secretary of State for Energy of the Portuguese Government**: Program E4 for Portugal (became the 5th country on Wind energy in Europe). Today Portugal is the 3th MS in the EU with the largest share of renewable electricity (after DK and Austria).

2006 – **3rd Buildings Thermal Regulations** for Portugal

2007-2014 – **Founder and President of the Energy Agency of Porto and of the Metropolitan Area of Porto**

2014 – **Consultant to the EC2 – China Project**

Emerging from R&D at IDMEC *et al.*

Eduardo de Oliveira Fernandes

R&D

Energy

Buildings with the Climate – the passive Portuguese (Mediterranean) approach

Experimental Solar House

Integration of results in the Portuguese Regulations

Energy management in Cities

Postgraduate Course MIT|Portugal at FEUP on Sustainable Energy Systems

10 EU projects sponsored by EC

Air Quality

1976-84 – Responsible for air quality for Portugal

1984-85 – Secretary of State of the Portuguese Government for Environment

1991 – Coordinator of the 1st wide IAQ & Energy Audit extended to 54 offices in 8 EU countries

1994- ... >15 projects sponsored by DG Research, DGSanco and JRC on IAQ

2008 –EnVIE - strategy for IAQ versus pollution and ventilation

2012 – OFFICAIR – IAQ in offices. Intervention.

2012 – SINPHONIE – schools (>1600 students)

2012 – EFFECT- Consumer products as pollutant sources

2014-2018 – HEALS – EXPOSOME