**FCT** Fundação para a Ciência e a Tecnologia

MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

Concursos de Projectos de I&D
Proposals for R&D Projects

▶ **Voltar à descrição do projecto**
  **Back to project description**

▶ **Instruções para consultar e imprimir esta página**
  **Instructions to view and print this page**

▶ **Imprimir esta página**
  **Print this page**

**Visão global da candidatura**
**Application form overview**

| | |
|---|---|
| **Ocultar todos os formulários da candidatura**<br>**Hide all forms for this application** | − |

**Referência do projecto**
**Project reference**

PTDC/EAT/64201/2006

| | |
|---|---|
| 1. Identificação do projecto<br>1. Project description | − |

**Financiamento solicitado**
**Requested funding**

196.817,00 Euros

**Área científica principal**
**Main Area**

Estudos Artísticos

**Área científica Secundária**
**Secondary area**

Filosofia

**Título do projecto (em português)** _i_
**Project title (in portuguese)**

A Imagem na Ciência e na Arte

**Título do projecto (em inglês)**
**Project title (in english)**

Image in Science and Art

| | |
|---|---|
| **Palavra-chave 1** _i_ | **Keyword 1** |
| Filosofia da Imagem | Philosophy of Image |
| **Palavra-chave 2** | **Keyword 2** |
| Estética e Neuroestética | Aesthetics and Neuroaesthetics |
| **Palavra-chave 3** | **Keyword 3** |
| Desenho anatomico | Anatomic drawings |
| **Palavra-chave 4** | **Keyword 4** |
| Imagem cientifica | Scientific Image |

**Objectivos sócio-económicos**
**Socio-economic objectives**

Promoção geral dos conhecimentos (investigação fundamental sem objectivo sócio-económico discriminado)

| | |
|---|---|
| **Data de início do projecto**<br>**Starting date** | **Duração do projecto em meses** _i_<br>**Duration in months** |
| 01-01-2007 | 36 |

| | |
|---|---|
| 2. Instituições participantes<br>2. Participating institutions | − |

**Instituição Proponente** _i_
**Principal Contractor**

**Fundação da Faculdade de Ciências (FFC/FC/UL**)

Campo Grande - Edifício C7 -1º Piso
1749-016Lisboa

**Instituições Participantes** _i_
**Participating Institutions**

**Faculdade de Belas-Artes da Universidade de Lisboa (FBA/UL**)

Largo da Academia Nacional de Belas Artes
1249-058Lisboa

**Faculdade de Ciências Sociais e Humanas (FCSH/UNL**)

Av. de Berna, 26 C
1069-061Lisboa

**Faculdade de Letras da Universidade de Lisboa (FL/UL**)

Alameda da Universidade
1600-214Lisboa

**Faculdade de Medicina da Universidade de Lisboa (FM/UL**)

Av. Prof. Egas Moniz
1649-028Lisboa

**Unidade de Investigação**
**Principal Research Unit**

**Centro de Filosofia da Ciência (FC/UL**)

Campo Grande
1749-016Lisboa

**Instituição de Acolhimento**
**Host Institution**

**Faculdade de Ciências da Universidade de Lisboa (FC/UL**)

Campo Grande - Edifício C5
1700-000Lisboa

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3. Orçamento
3. Budget

| − |

**Instituição Proponente**
**Principal Contractor**

**Fundação da Faculdade de Ciências**

| DESCRIÇÃO<br>DESCRIPTION | 2007 | 2008 | 2009 | 2010 | 2011 | **TOTAL** |
|---|---|---|---|---|---|---|
| Recursos Humanos<br>Human resources | 27560 | 27560 | 27560 | 0 | 0 | 82680 |
| Missões<br>Missions | 7500 | 7500 | 7500 | 0 | 0 | 22500 |
| Consultores<br>Consultants | 8700 | 8700 | 8700 | 0 | 0 | 26100 |
| Aquisição de serviços e manutenção<br>Acquisition of services and maintenance | 0 | 4000 | 6000 | 0 | 0 | 10000 |
| Outras despesas correntes<br>Other current expenses | 5997 | 2000 | 1000 | 0 | 0 | 8997 |
| Despesas gerais<br>Overheads | 10600 | 10600 | 10800 | 0 | 0 | 32000 |
| Equipamento<br>Equipment | 14540 | 0 | 0 | 0 | 0 | 14540 |
| **TOTAL** | 74897 | 60360 | 61560 | 0 | 0 | **196817** |

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**Instituições Participantes**
**Participating Institutions**

**Faculdade de Belas-Artes da Universidade de Lisboa**

| DESCRIÇÃO<br>DESCRIPTION | 2007 | 2008 | 2009 | 2010 | 2011 | TOTAL |
|---|---|---|---|---|---|---|
| Recursos Humanos<br>Human resources | 0 | 0 | 0 | 0 | 0 | 0 |
| Missões<br>Missions | 0 | 0 | 0 | 0 | 0 | 0 |
| Consultores<br>Consultants | 0 | 0 | 0 | 0 | 0 | 0 |
| Aquisição de serviços e manutenção<br>Acquisition of services and maintenance | 0 | 0 | 0 | 0 | 0 | 0 |
| Outras despesas correntes<br>Other current expenses | 0 | 0 | 0 | 0 | 0 | 0 |

| Despesas gerais Overheads | 0 | 0 | 0 | 0 | 0 | 0 |
| Equipamento Equipment | 0 | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | 0 | 0 | 0 | 0 | 0 | **0** |

### Faculdade de Ciências Sociais e Humanas

| DESCRIÇÃO DESCRIPTION | 2007 | 2008 | 2009 | 2010 | 2011 | TOTAL |
|---|---|---|---|---|---|---|
| Recursos Humanos Human resources | 0 | 0 | 0 | 0 | 0 | 0 |
| Missões Missions | 0 | 0 | 0 | 0 | 0 | 0 |
| Consultores Consultants | 0 | 0 | 0 | 0 | 0 | 0 |
| Aquisição de serviços e manutenção Acquisition of services and maintenance | 0 | 0 | 0 | 0 | 0 | 0 |
| Outras despesas correntes Other current expenses | 0 | 0 | 0 | 0 | 0 | 0 |
| Despesas gerais Overheads | 0 | 0 | 0 | 0 | 0 | 0 |
| Equipamento Equipment | 0 | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | 0 | 0 | 0 | 0 | 0 | **0** |

### Faculdade de Letras da Universidade de Lisboa

| DESCRIÇÃO DESCRIPTION | 2007 | 2008 | 2009 | 2010 | 2011 | TOTAL |
|---|---|---|---|---|---|---|
| Recursos Humanos Human resources | 0 | 0 | 0 | 0 | 0 | 0 |
| Missões Missions | 0 | 0 | 0 | 0 | 0 | 0 |
| Consultores Consultants | 0 | 0 | 0 | 0 | 0 | 0 |
| Aquisição de serviços e manutenção Acquisition of services and maintenance | 0 | 0 | 0 | 0 | 0 | 0 |
| Outras despesas correntes Other current expenses | 0 | 0 | 0 | 0 | 0 | 0 |
| Despesas gerais Overheads | 0 | 0 | 0 | 0 | 0 | 0 |
| Equipamento Equipment | 0 | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | 0 | 0 | 0 | 0 | 0 | **0** |

### Faculdade de Medicina da Universidade de Lisboa

| DESCRIÇÃO DESCRIPTION | 2007 | 2008 | 2009 | 2010 | 2011 | TOTAL |
|---|---|---|---|---|---|---|
| Recursos Humanos Human resources | 0 | 0 | 0 | 0 | 0 | 0 |
| Missões Missions | 0 | 0 | 0 | 0 | 0 | 0 |
| Consultores Consultants | 0 | 0 | 0 | 0 | 0 | 0 |
| Aquisição de serviços e manutenção Acquisition of services and maintenance | 0 | 0 | 0 | 0 | 0 | 0 |
| Outras despesas correntes Other current expenses | 0 | 0 | 0 | 0 | 0 | 0 |
| Despesas gerais Overheads | 0 | 0 | 0 | 0 | 0 | 0 |
| Equipamento Equipment | 0 | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | 0 | 0 | 0 | 0 | 0 | **0** |

### Orçamento Global
**Global budget**

| DESCRIÇÃO DESCRIPTION | 2007 | 2008 | 2009 | 2010 | 2011 | **TOTAL** |
|---|---|---|---|---|---|---|
| Recursos Humanos Human resources | 27560 | 27560 | 27560 | 0 | 0 | 82680 |

| | 2007 | 2008 | 2009 | 2010 | 2011 | TOTAL |
|---|---|---|---|---|---|---|
| Missões<br>Missions | 7500 | 7500 | 7500 | 0 | 0 | 22500 |
| Consultores<br>Consultants | 8700 | 8700 | 8700 | 0 | 0 | 26100 |
| Aquisição de serviços e manutenção<br>Acquisition of services and maintenance | 0 | 4000 | 6000 | 0 | 0 | 10000 |
| Outras despesas correntes<br>Other current expenses | 5997 | 2000 | 1000 | 0 | 0 | 8997 |
| Despesas gerais<br>Overheads | 10600 | 10600 | 10800 | 0 | 0 | 32000 |
| Equipamento<br>Equipment | 14540 | 0 | 0 | 0 | 0 | 14540 |
| **TOTAL** | 74897 | 60360 | 61560 | 0 | 0 | **196817** |

### Plano de financiamento
### Finance plan

| DESCRIÇÃO<br>DESCRIPTION | 2007 | 2008 | 2009 | 2010 | 2011 | TOTAL |
|---|---|---|---|---|---|---|
| Financiamento solicitado à FCT<br>Requested funding | 74897 | 60360 | 61560 | 0 | 0 | 196817 |
| Financiamento próprio<br>Own funding | 0 | 0 | 0 | 0 | 0 | 0 |
| Outro financiamento público<br>Other public-sector funding | 0 | 0 | 0 | 0 | 0 | 0 |
| Outro financiamento privado<br>Other private funding | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total do Projecto**<br>**Total of the project** | 74897 | 60360 | 61560 | 0 | 0 | **196817** |

4. Justificação do orçamento
4. Budget justification

| - |

#### 4.1. Justificação dos recursos humanos
#### 4.1. Human resources justification

| Tipo | N° de pessoas | Duração | Custo envolvido (€) |
|---|---|---|---|
| (BI) Bolsa de Investigação (Lic. ou Bacharel) | 1 | 36 | 29720 |

Justificação

The researcher will be asked to identify, classify and study the anatomical drawings of the Museum of Medicine's stocks (thousands of items), to facilitate the comprehension of the esthetical and social phenomena inherent to those items, to produce informative materials, to define the presentation rules of those items, using modern museology's basic rules. He/she will also collaborate in the organization of the book and will write captions and informative texts for the exhibition and the conference.

| Tipo | N° de pessoas | Duração | Custo envolvido (€) |
|---|---|---|---|
| (BI) Bolsa de Investigação (Lic. ou Bacharel) | 1 | 36 | 29720 |

Justificação

The grant holder BIC 2 research is divided in two parts. 1) a survey on the role played by images in the scientific journal "Nature" and in one relevant Portuguese scientific review. The grant holder will follow the historical development of the use of image in these publications, calling attention to the epistemological issues related to scientific images.
2) the exhaustive investigation of the Portuguese production in the area of scientific illustration. This survey is quite ambitious in scope, intending to cover the five century lasting tradition of scientific illustration in Portugal.

| Tipo | N° de pessoas | Duração | Custo envolvido (€) |
|---|---|---|---|
| (BTI) Bolsa de Técnico de Investigação (sem grau acad.) | 1 | 36 | 23240 |

Justificação

This scholarship holder will assist the research team in the development of the project, namely giving technical support to the various activities. In particular, he/she will create and update the website, which will contain, along with all information about the project, a great archive of images and a large forum, open to the general public, to facilitate the intertwining among the scientific and artistic communities. Further more, he/she will assist the team in the organization of the exhibition, workshops and final conference, and in the edition of the books.

**Custo total:** 82680

#### 4.2. Justificação de missões
#### 4.2. Mission justification

| Tipo | Local | N° de deslocações | Custo envolvido (€) |
|---|---|---|---|
| Participação em congressos | International Congresses | 9 | 9000 |

Justificação

Nine senior and PHD members of the research team will have the opportunity to submit their research results and to discuss their papers in international meetings and conferences (9 x 1000 euros = 9000)

| Tipo | Local | N° de deslocações | Custo envolvido (€) |
|---|---|---|---|
| Trabalho de campo | Libraries and Research Centers | 9 | 13500 |

Justificação

Nine junior members of the research team will have the opportunity to make a week of research in good European Libraries and Research Centers (Berlin, Paris, Milan) where a substantial amount of the bibliographical research will have to take place (9 x 1500 = 13500).

**Custo total:** 22500

### 4.3. Justificação de consultores
### 4.3. Consultants justification

| Nome | Instituição | Fase do projecto | Custo envolvido (€) |
|---|---|---|---|
| Andrea Pinotti | Philosophy Department of Universitá Statale di Milano | Scientific Coordination to the task: | 4050 |

**Justificação**

Prof. Pinotti, professor of Theory of Image and Aesthetics at the University of Milan and one of the most relevant European scholars in the area of Neuroaesthetics, will be invited to come to Lisbon in 2007, 2008 and 2009 to give scientific support to local research team working on neuroaesthetics. Each year, he will be asked to stay for three days in which he will be invited to give a public conference in a specific Workshop on Neuroaesthetics organized in that occasion and to direct a two days Seminar (8 hours) with the research team.

| Nome | Instituição | Fase do projecto | Custo envolvido (€) |
|---|---|---|---|
| Carlo Vecce http://www.unimc.it/web_9900/prov_dip/glottolo/Person/Vecce/Vecce1.htm | University of Macerata | Scientific support to the task: | 4050 |

**Justificação**

Prof. Vecce, professor of Italian Medieval Literature at the University of Macerata (Italy), one of the most important international experts in Leonardo's Manuscripts, will be invited to come 3 times to Lisbon to give scientific support to local research team on Leonardo. Each year, he will be asked to stay for 3 days. He will be invited to give a public conference in a specific Workshop on Leonardo da Vinci organized in that occasion and to direct a 2 days Seminar (8h each) with the research team. Particular support will be also asked to the Master Dissertation of Ana Maria Figueiredo.

| Nome | Instituição | Fase do projecto | Custo envolvido (€) |
|---|---|---|---|
| Dr. Ingeborg Reichle | Berlin-Brandenburgische Akademie der Wissenschaften & Humboldt Universität Berlin | Scientific support | 4050 |

**Justificação**

Prof. Ingeborg Reichle, head of the research project "The Logic of Images" at the Berlin Brandenburgische Acadamy of Sciences, is one of the most distinguished scholars in new media art (Bioart and ALife Art), will be invited to come 3 times to Lisbon to give scientific support to local research team on new media art. Each year, he will be asked to stay for 3 days. She will be invited to give a public conference in a specific Workshop on new media art, the image and Lifesciences, organized in that occasion and to direct a 2 days Seminar (8h each) with the research team.

| Nome | Instituição | Fase do projecto | Custo envolvido (€) |
|---|---|---|---|
| Hans Belting | Academy for Design [Hochschule fuer Gestaltung] - Karlsruhe, Germany | Scientific support to the task: | 4050 |

**Justificação**

Prof. Belting, Professor for Art History and Media Theory at the Academy for Design in Karlsruhe, Germany and one of the most distinguished scholars in Art history and Aesthetics, will be invited to come 3 times to Lisbon to give scientific support to local research team on Philosophy of Image. Each year, he will be asked to stay for 3 days. He will be invited to give a public conference in a specific Workshop on Philosophy of Image organized in that occasion and to direct a 2 days Seminar (8h each) with the research team.

| Nome | Instituição | Fase do projecto | Custo envolvido (€) |
|---|---|---|---|
| Michael Hoffman http://www.spp.gatech.edu/faculty/faculty/mhoffmann.php | Georgia Institute of Technology | Scientific support to the task: | 5850 |

**Justificação**

Prof. Hoffman, associate professor of Philosophy at Georgia Institute of Technology, one of the most distinguished scholars in diagrammatic reasoning, will be invited to come 3 times to Lisbon to give scientific support to local research team on diagrammatic reasoning. Each year, he will be asked to stay for 3 days. He will be invited to give a public conference hin a specific Workshop on Diagrammatic Reasoning organized in that occasion and to direct a 2 days Seminar (8h each) with the research team. Particular support will be also asked to the referred Master Dissertation of Ana Paula Silva.

| Nome | Instituição | Fase do projecto | Custo envolvido (€) |
|---|---|---|---|
| Prof. Dr. H.-J. Rheinberger | Max Planck Institute for the History of Science, Berlin (Director) | 2007-2009 | 4050 |

**Justificação**

Prof. Rheinberger is a very well known philosopher and historian of science that developed a very innovative approach on "experimental systems" in research between science and art, and wrote influencing articles on the status of the image and visualization. He will be asked to reflect on the differences between art and scientific visualizations and in the trace-concept in biological research and in Bioart. He will be invited to give a public conference in a specific Workshop organized in that occasion and to direct a 2 days Seminar (8h each) with the research team.

**Custo total:** 26100

### 4.4. Justificação de aquisição de serviços e manutenção
### 4.4. Acquisition of services and maintenance justification

| Tipo | Custo envolvido (€) |
|---|---|
| Digital Editing and Printing | 10000 |

Justificação

The books will be entirely produced by the project in digital format, however they will be edited and printed through digital print-on-demand services, assuring high quality results and low costs (5 x 2000 euros = 10000 euros). Note that additional sources of funding will be fostered.

**Custo total:** 10000

### 4.5. Justificação de outras despesas correntes
### 4.5. Current expenses justification

| Tipo de despesa | Custo envolvido (€) |
|---|---|
| Books and consumables | 6000 |

Justificação

Funding under this item is mainly to buy bibliographical material. However, we will need some funding for the acquisition of stationary, for the production of dissemination materials, and other current expenses.

| Tipo de despesa | Custo envolvido (€) |
|---|---|
| Software - Creative Suite 2 Adobe Premium | 1199 |

Justificação

Adobe Creative Suite 2 Premium is a software unified design environment that combines full new versions of Adobe Photoshop CS2, Illustrator CS2, InDesign CS2, GoLive CS2, and Acrobat 7.0 Professional software with new Version Cue CS2, Adobe Bridge, and Adobe Stock Photos. Delivering the next level of integration in creative software, Adobe Creative Suite 2 enables you to realize your ideas anywhere - in print, on the Web, or on mobile devices.

| Tipo de despesa | Custo envolvido (€) |
|---|---|
| Software - Final Cut Studio Apple 5 | 1299 |

Justificação

Software for editing and DVD production

| Tipo de despesa | Custo envolvido (€) |
|---|---|
| Software- Office 2004 for Mac Microsoft Professional Edition | 499 |

Justificação

Mac Microsoft Professional Edition Office Software

**Custo total:** 8997

### 4.6. Justificação do Equipamento
### 4.6. Equipment justification

#### 4.6.1. Equipamento já disponível para a execução do projecto
#### 4.6.1 Available equipment

*(vazio)*
*(void)*

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#### 4.6.2. Discriminação do equipamento a adquirir
#### 4.6.2. List of new equipment requested

| Tipo de equipamento | Fabricante | Modelo | Custo envolvido (€) |
|---|---|---|---|
| Computador portátil | Apple | MacBook Pro 17 inch | 2699 |

Justificação

A mobile workstation of image treatment will be fundamental to analyze, to manipulate and to reflect various image types: photography, paintings, videos, diagrams, medical images, body scan images, hybrid forms of text and image. This mobile workstation of image treatment will also be fundamental to access various library facilities in different places to study the development of the use and functions of images and illustrations in the history of the renowned journal "Nature", comparing it to other relevant similar publications.

| | | | |
|---|---|---|---|
| Computador portátil | Apple | MacBook Pro 17 inch | 2699 |

Justificação

A mobile workstation will be fundamental for the identification, cataloguing and analysis of images stored at the Museum of Medicine archive and to the missions abroad, namely the bibliographical research in European libraries

| | | | |
|---|---|---|---|
| Computador Workstation | Apple | Quad 2.5Ghz PowerPC G5 | 3199 |

Justificação

As it deals with a number of different format of images: from watercolors to digital images, from still pictures to moving images (3D animations, video and medical imaging devices), the organization and development of the project will require this powerful tool. This computer will also be necessary in the realization of the exhibition, to manage the projection of still and moving images.

| | | | |
|---|---|---|---|
| Stationary Computer | Apple | Imac 2Ghz Duo | 1200 |

Justificação

1. Computador do escritório com accesso ao Internet para o projecto da Investigação

| | | | |
|---|---|---|---|
| Printer | HP | Laserjet 1160 | 325 |

Justificação

Office Printer for working prints, secretary work, etc.

| | | | |
|---|---|---|---|
| Data Storage portable | LaCie | 1 TB / USB2.0 &FireWire 400 & 800 EXTREME II / 7200 RPM / 1r | 603 |

Justificação

For the storing of the image archive which thus can be transported easily, for example to be used in an exhibition

| | | | |
|---|---|---|---|
| Monitor | Apple | 20 LCD Cinema Display | 820 |

Justificação

Monitor of the image workstation

| | | | |
|---|---|---|---|
| Projector Datashow | NEC | LT35 3000 ANSI lumen Lightweight Powerhouse Portable Projector | 2995 |

Justificação

Toll for light presentation (data/video/image), needed for conferences and internal meetings of the project

**Custo total:** 14540

5. Equipa de investigação

5. Research team

**5.1 Lista de membros** (18)

**5.1. Members list** (18)

| Nome | Função | Grau académico | %tempo |
|---|---|---|---|
| **Name** | **Role** | **Academic degree** | **%time** |
| Olga Maria Pombo Martins | Inv. Responsável | DOUTORAMENTO | 25 |
| João Luís de Lemos e Silva Cordovil | Investigador | Parte Curricular do Mestrado em História e Filosofia das Ciências | 25 |
| Maria Filomena Guerreiro Vieira Molde… | Investigador | DOUTORAMENTO | 10 |
| Nuno Gabriel de Castro Nabais dos San… | Investigador | DOUTORAMENTO | 25 |
| José Nunes Ramalho Croca | Investigador | AGREGAÇÃO | 15 |
| Ana Paula Rocha Coelho de Figueiredo … | Investigador | Licenciatura em Ensino da Matemática | 25 |
| Alexander Matthias Gerner | Investigador | LICENCIATURA | 25 |
| António Manuel Bracinha Vieira | Investigador | DOUTORAMENTO | 50 |
| Davide Scarso | Investigador | Pós-Graduação | 25 |
| Cristina de Sousa Azevedo Tavares | Investigador | DOUTORAMENTO | 25 |
| Catarina Pombo Martins de Castro Naba… | Investigador | DOUTORAMENTO | 50 |
| Cristina Luísa Sofia Duarte de Deus B… | Investigador | MESTRADO | 25 |
| Ana Maria Rodrigues de Figueiredo | Investigador | LICENCIATURA | 50 |
| Ana Maria Mendes Gaspar | Investigador | LICENCIATURA | 25 |
| Manuel Luís Valente Alves | Investigador | LICENCIATURA | 30 |
| Cláudia Sofia Luis Gonçalves | Investigador | LICENCIATURA | 30 |
| Veronica Fabrini | Investigador | DOUTORAMENTO | 10 |
| Pedro Daniel Vaz Pereira Rodrigues Sa… | Investigador | Pós-Graduação | 25 |

*(O curriculum vitae de cada membro da equipa está disponível clicando no nome correspondente)*

*(Curriculum vitae for each research team member is available by clicking on the corresponding name)*

**5.2. Lista de membros a contratar durante a execução do projecto** (3)

**5.2. Members list to hire during project's execution** (3)

| Membro da equipa | Função | Duração | %tempo |
|---|---|---|---|
| **Team member** | **Role** | **Duration** | **%time** |
| (BI) Bolseiro de Investigação (Lic. ou Bacharel) 1 | Bolseiro | 36 | 100 |
| (BI) Bolseiro de Investigação (Lic. ou Bacharel) 2 | Bolseiro | 36 | 100 |
| (BTI) Bolseiro Técnico de Investigação (sem grau acad.) 1 | Bolseiro | 36 | 100 |

6. Projectos financiados

6. Funded projects

**Lista de projectos financiados** (6)

**Funded projects list** (6)

| Referência | Título | Estado |
|---|---|---|
| POCTI/FIL/48133/2002 | Cultura cientÌfica. MigraÁões … | Em curso |
| POCTI/FIL/36357/2000 | Hipertexto e enciclopédia | Em curso |
| Passagens. 100 peças para o Museu de Medicina | Passagens. 100 peças para o Mu… | Em curso |
| Impulso Alegórico | O Impulso Alegórico - retratos… | Em curso |
| Geração Médica de 1911 | Geração Médica de 1911 | Em curso |
| Kulturreferat der Landeshauptstadt München | "Corte" | Em curso |

*(Os detalhes de cada projectos estão disponíveis clicando na referência correspondente)*

*(Details for each project are available by clicking on the corresponding reference)*

7. Indicadores previstos
7. Expected indicators

**−**

**Indicadores de realização previstos para o projecto**
**Expected output indicators**

| DESCRIÇÃO DESCRIPTION | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|---|---|---|---|---|---|---|
| **A - Publicações** **Publications** | | | | | | |
| Livros Books | 1 | 1 | 3 | 0 | 0 | **5** |
| Artigos em revistas internacionais Papers in international journals | 6 | 7 | 7 | 0 | 0 | **20** |
| Artigos em revistas nacionais Papers in national journals | 5 | 6 | 6 | 0 | 0 | **17** |
| **B - Comunicações** **Communications** | | | | | | |
| Comunicações em encontros científicos internacionais Communications in international meetings | 9 | 9 | 9 | 0 | 0 | **27** |
| Comunicações em encontros científicos nacionais Communications in national meetings | 18 | 18 | 18 | 0 | 0 | **54** |
| **C - Relatórios** **Reports** | 1 | 1 | 1 | 0 | 0 | **3** |
| **D - Organização de seminários e conferências** **Organization of seminars and conferences** | 16 | 16 | 18 | 0 | 0 | **50** |
| **E - Formação avançada** **Advanced training** | | | | | | |
| Teses de Doutoramento PhD theses | 1 | 0 | 2 | 0 | 0 | **3** |
| Teses de Mestrado Master theses | 0 | 2 | 1 | 0 | 0 | **3** |
| Outras Others | 0 | 0 | 1 | 0 | 0 | **1** |
| **F - Modelos** **Models** | 0 | 0 | 0 | 0 | 0 | **0** |
| **G - Aplicações computacionais** **Software** | 0 | 0 | 0 | 0 | 0 | **0** |
| **H - Instalações piloto** **Pilot plants** | 0 | 0 | 1 | 0 | 0 | **1** |
| **I - Protótipos laboratoriais** **Prototypes** | 0 | 0 | 0 | 0 | 0 | **0** |
| **J - Patentes** **Patents** | 0 | 0 | 0 | 0 | 0 | **0** |
| **L - Outros** **Other** | | | | | | |
| Website Website | 1 | 0 | 0 | 0 | 0 | **1** |
| Lisbon Center of Image in Art and Science (LCIAS) Lisbon Center of Image in Art and Science (LCIAS) | 0 | 0 | 1 | 0 | 0 | **1** |
| Exhibition Exhibition | 0 | 0 | 1 | 0 | 0 | **1** |

**Acções de divulgação da actividade científica**
**Scientific activity spreading actions**

The results will be diffused to the general public by
- the publication of several BOOKS and ARTICLES,
- the organization of a series of PUBLIC CONFERENCIES, OPEN LECTURES and WORKSHOPS,
- the organization of a final three days INTERNATIONAL COLLOQUIUM on "Image in Science and Art" to be held in 2010 (as the Second Lisbon Colloquium for the Philosophy of Science, Center for Philosophy of Science, University of Lisbon)
- the organization of a large EXIBITION in collaboration with art-focused institutions putting in parallel Portuguese scientific drawings together with exemplars of the collections of anatomical drawings (Museum of Medicine)and nude drawings (Lisbon Fine Art School)
- the construction and maintenance of A WEBPAGE (in connection with the webpage of the Museum of Medicine) witch will serve as a platform for all project activity and work in progress and which will include a large database: LISBON CENTER OF IMAGE BETWEEN SCIENCE AND ART (LCISA)
Dados temporariamente indisponíveis

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8. Anexo técnico
8. Technical addendum

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**8.1. Resumo**
**8.1. Abstract**

**Resumo (em português)**
**Abstract (in portuguese)**

Vivemos hoje sob o império da imagem. Depois da voz e da escrita, é a imagem que adquire uma inaudita relevância. Ela determina a nossa vida de forma cada vez mais decisiva, tanto a nossa maneira de ver o mundo como a forma de nele inscrevermos a nossa existência individual e colectiva. Qual o bem fundado desta apreciação? Em que consiste o novo estatuto da imagem, se é que existe? De que modo a digitalização transforma as tradicionais funções da imagem?(task3). Mas, o que é afinal a imagem? Como tem sido pensada pela tradição filosófica? Que novas aproximações teóricas têm sido propostas? Será a imagem apenas um meio de aceder ao conceito, efémero mediador, simples aparição? Ou, pelo contrário, uma realidade que se oferece enquanto apresentação sensível de uma ordem que só nela e por ela se dá a ver? Como explicar que seja a concepção de imagem como meio com vista a um fim que trabalha a expressão "meios audio-visuais" quando, paradoxalmente, sabemos que as novas tecnologias são um dos mais poderosos factores da espessura que a imagem hoje adquiriu?(t1). Gadamer (1960) mostrou que, se o iconoclastismo é o receio de que a imagem possa funcionar como fim em si mesma, a arte foi salva no ocidente cristão porque aí a imagem se deixou pensar, não como algo que reenvia ao que representa (Deus Pai), mas de forma positiva, pela sua capacidade de afirmar o que o modelo por si só não poderia afirmar (Cristo). A sacralização da Arte encontraria o seu fundamento numa compreensão da imagem em que esta é, não uma simples "cópia" que vale pela sua capacidade de veícular a realidade que representa, mas como realidade dotada de um ser próprio. Não poderão as recentes produções artísticas ser pensadas como expressão desta valorização extrema da imagem? E na ciência? Será que a imagem desempenha mais do que uma função representativa? Se assim é, qual o seu papel? Por que são as imagens usadas em ciência? Como são usadas? De que modo se pode dizer que uma imagem científica é verdadeira? Será que a imagenm científica pode ser artisticamente avaliada? Em caso afirmativo, com que critérios? Sabemos que a História e a Filosofia da Ciência de inspiração positivista negligenciaram o estudo da imagem em ciência atribuindo-lhe um mero papel ilustrativo. Por seu lado, os Historiadores da Arte só se têm interessado pela imagem científica enquanto elemento decorativo, em articulação com a estética da época e a Iconografia só as têm estudado em termos técnicos, à margem da ciência que são supostas ilustrar (Blunt e Stearn,1994). Na linha de Mitchell (1998), interessa-nos estudar a imagem em ciência em termos internos, relativos à constituição do discurso científico, aos efeitos de estabilização, reforço ou simbiose que mantém com a palavra, e externos, determinando os factores ideológicos e estéticos que intervêm na sua produção e utilização. Ver, por exemplo, como as imagens ultrapassam as intenções com que são criadas pelos cientistas e se propagam para a cultura geral aí configurando a nossa imagem e discurso acerca do planeta Terra, da sexualidade, da raça, etc.

Com base numa EQUIPA interdisciplinar, este projecto tem a imagem como OBJECTO central de investigação. A METODOLOGIA será comparativa (estudos de caso), cruzando sempre arte, ciência e filosofia.

Faremos o estudo histórico de 4 obras paradigmáticas quanto ao estatuto híbrido que a imagem nelas desempenha, enquanto dispositivo de saber dotado de valor estético vs objecto artístico cognitivamente orientado (Leonardo, Vesalius, Goethe and Darwin)(t5). Investigaremos as formas pelas quais a imagem é usada na construção do conceito científico e na comunicação/divulgação da ciência a partir do estudo sistemático da ilustração científica em Portugal(t7) e do levantamento exaustivo do seu lugar em 2 revistas portuguesas (científica e de divulgação - t6). Em colaboração com as Faculdades de Medicina e Belas Artes da UL, propomo-nos identificar, catalogar e estudar a inexplorada colecção de desenhos anatómicos do Museu de Medicina(t8), comparando-a com a colecção de desenhos de nu da FBAUL(t9), confrontando assim o estudo científico da anatomia humana e o desenho artístico do corpo humano. Em diálogo com a tradição filosófica e seus desenvolvimentos actuais (Bachelard e Deleuze - t4), queremos questionar a própria natureza da imagem e, se possível, participar na elaboração de uma "filosofia da imagem"(t1). Analisaremos o lugar da imagem em 3 programas epistemológicos e semióticos (Leibniz, Frege e Peirce(t2) e interrogaremos o alcance das recentes explorações (anos 90) da Neuroestética(t10).

3 compromissos fundamentais: dar especial atenção à produção portuguesa de imagem em termos de ciência e arte(ts6,7,8,9); promover a investigação interdisciplinar entre as comunidades artística, científica e filosófica em Portugal; divulgar amplamente o nosso trabalho e resultados(t11)

## Resumo (em inglês)

### Abstract (in english)

We are today under the empire of image. After oral and written words, it seems that image acquires an unprecedented relevance. It dramatically determines our life, both our way of seeing the world and the way of performing our individual and collective existence. Is this a well grounded appreciation? What is the new status of image, if any? In which way does digitalization transform the traditional functions of image? (task 3). What is image, after all? How has it been thought by the philosophical tradition? What new theoretical approaches have been proposed to its clarification? Is image just a means for accessing the concept, a fragile and evanescent mediator, a mere appearance? Or, on the contrary, is it a powerful entity, a sensible presentation of a meaning which only in it and by it can be seen? How to explain that such a conception of image (as a means in view of an end) could be at the root of the expression "audio-visual means" when, paradoxically, new technologies are powerful factors that can explain the density of image we witness today?(t1). Gadamer (1960) stresses that iconoclasticism is the fear that image may function as an end in itself. Art would have thus been saved in Christian civilization because, here, image was conceived, not only as opening to what it represents (God, the Father), but in a positive way, by its capacity of affirming something which the represented entity could not mean by itself (Christ). Sacralization of Art would have thus been grounded, not in the "copy-image" (mere vehicle for the represented reality), but in a powerful entity. We could ask whether the recent artistic productions are not the expression of such an extreme valorization of image? And, in the case of Science?Does image have in science more than a simple representative function?If so, what is then its role in Science? Why are images used in science? How are they used?How can we say that one scientific image is truthful and accurate? Can scientific images be artistically evaluated? If so, by which criteria? We know that positivist History and Philosophy of Science has neglected the study of image in science, considering it as a mere illustrative entity. Art Historians, by their side, have only been interested in scientific image in articulation with the aesthetics of its time. The interest of Iconography towards scientific image is strictly technical, totally away from the content those images are supposed to illustrate (Blunt e Stearn, 1994). Now, in the line of Mitchell (1998), we want to study image in science, both in internal terms, concerned with the construction of scientific discourse, and external, related to the ideological and aesthetical factors of its production, use and public appropriation. To see, e.g., in which way images produced by science overcome the intentions with which they were created by scientists and are propagated to general culture, there caming to configure our image and discourse about earth planet, sexuality, race, etc.

On the basis of an interdisciplinary TEAM, this project takes image as its central OBJECT. This is to be done by a COMPARATIVE METHODOLOGY, always trying to intertwine Art and Science. We want to undertake some CASE-STUDIES able to give a deeper understanding of the status and functions of image in Art and Science. We propose to do historical studies on some paradigmatic works caracterised by the hybrid status of image as knowledge entities endowed with aesthetical value vs artistic objects cognitively oriented (Leonardo, Vesalius, Goethe and Darwin -t5). We will also investigate the forms by which image is used in the construction of scientific concepts and in the public communication of science by the systematic study of Portuguese scientific illustration (t7), and the exhaustive survey of Portuguese journals (scientific and of divulgation -t6). A main undertaking will be fostered in collaboration with the Schools of Medicine and Fine Arts of the University of Lisbon. We propose to identify, classify and study the unexplored collection of anatomical drawings of the Museum of Medicine (t8), comparing those data with the collection of nude drawings from the School of Fine Arts (t9). We hope that the comparison between the scientific study of human anatomy and the artistic drawing of human body will have relevant heuristic results. In dialogue with the philosophical tradition and its recent developments (Bachelard, Deleuze -t4), we will also question the very nature of image and, if possible, participate at the elaboration of a "philosophy of image"(t1).We propose to analyze the role of image in some main epistemological and semiotic programs (Leibniz, Frege, Peirce -t2) and to question the reach of

the recent explorations of Neuroaesthetics in the 90s (t10). We assume 3 commitments:to give special attention to Portuguese production of image in science and art (ts6,7,8,9), to promote an interdisciplinary research with artistic, scientific and philosophical communities in Portugal(t11); to divulgate our data and results (t11).

**8.2. Objectivos**

**8.2. Objectives**

**Descrição dos Objectivos do Projecto**

**Project Objectives (description)**

The research undertaken here is expected to improve an interdisciplinary research on image, in the perspective of art, science and philosophy. It aims to contribute with a/to the:

1 clarification, refining and elaboration of existent literature on philosophy of image; 2 new light to ongoing research on diagrammatic thinking; 3 evaluation of new status and function of image in our civilization; 4 new light to aesthetics of image (Bachelard, Deleuze); 5 development of History Art studies (Leonardo, Vesalius, Goethe, Darwin); 6 new light to philosophy of science concerned with cognitive and communicative dimension of image in science; 7 systematic study of Portuguese scientific drawing; 8 systematic study of the anatomical drawings of the collection of the Museum of Medicine; 9 study of the body concept in art and science by innovative comparison of nude drawings (Lisbon Art School) and anatomical drawings (Lisbon Museum of Medicine); 10 new light to contemporary research in Neuroaesthetics; 11 connection between artistic, scientific and philosophical communities in Portugal

**Descrição dos Objectivos do Investigador Responsável**

**Principal Investigator Objectives (description)**

This project comes in line of my previous research on the Leibnizian theory of sign (POMBO, 1987, 1990, 1996, 1997, 1998) and on Hypertex (POMBO, 2006). When Leibniz tries to overcome the ambiguities of human languages by the construction of a new, scientific and philosophical language, he looks for an ideografic language which, as he says in a letter to Gallois, 1677 (GP 7: 21) will be able to "paint", not the word but the thought. That is, Leibniz looks for a diagrammatical writing able to the simultaneous apprehension of the multiple determinations of the signified ideas, a language which would give the possibility of a stable, bi-dimensional and manipulatory fixation, register, revision and control of meaning and mental contents.

Now, this old leibnizian design gained today a central role. We find it behind hypertext structure which is more and more operative today, both in art, science and everyday life. My aim is to question the heuristic capacity of that Leibnizian project and to look for its possible contribution to actual research on philosophy of image.

**8.3. Estado da Arte**

**8.3. State of the Art**

**Descrição do Estado da Arte**

**State of the Art (description)**

Starting from an in-depth investigation of the most important contemporary positions in esthetics and philosophy of art, will try to clarify, refine and elaborate a general PHILOSOPHY OF IMAGE. In order to do so, the major works of reference will be:

BOEHME G. (1999), Theorie des Bildes, Fink, München.
GADAMER, H.-G. (1960), Warheit und Methode, Mohr, Tübingen.
GOMBRICH, E. H, (1994), Das forschende Auge: Kunstbetrachtung und Naturwahrnehmung, Campus-Verl. - Ed. de la Fondation - Edition Pandora, Frankfurt/Main ; New York ; Paris.
MAAR, C.; BURDA, H. (2005), Iconic Turn. Die Neue Macht der Bilder, DuMont Literatur und Kunst Verlag, Köln.

Particular attention will be given to the works by Hans-Joerg Rheinberger. On the basis of Biology, Rheinberger tries to avoid the traditional "representational" concept of image linked to the platonic tradition and, instead, speak of "visualization technologies".

RHEINBERGER, H.-J. (2001), Objekt und Repräsentation, in Heintz, Bettina & Jörg Huber (eds.), Mit dem Auge denken: Strategien der Sichtbarmachung in wissenschaftlichen und virtuellen Welten. Voldemeer, Zürich, pp. 55-61.
RHEINBERGER, H.-J. (2003), Präparate - ´Bilder´ ihrer selbst, Akademie-Verlag, Berlin.

The anthropological, symbolical-theoretical and formal approaches will be taken into account:

BELTING H. (2001) "Bild Anthropologie", Fink, München.
GOODMANN N. (1976), Languages of art: an approach to a theory of symbols, Hackett, Indianapolis.
WIESING L. (2005), "Artifizielle Praesenz", Suhrkamp, Frankfurt aM.
ID, (1997), Die Sichtbarkeit der Bilder. Geschichte und Perspektiven der formalen Ästhetik, Reinbek bei Hamburg.

In an epistemological perspective, two fundamental positions must be pointed out:

HACKING I. (1983), Representing and Inventing, Cambridge Univ. Press Cambridge.
PUTNAM H. (1988), Representation and Reality", MIT Press, Cambridge.

As well as
GALISON P. (1997) "Image and Logic", Univ. of Chicago Press, Chicago.
GALISON P. (2002) "Images scatter into Data, Data gather into images" in Bruno Latour e Peter Weibel (Eds) (2002), Iconoclash. Beyond the Image Wars in Science, Relig-ion, and Art. Karlsruhe, Cambridge, pp. 300-323.
DASTON, L. e GALLISON, P. (1992), "The Image of Objectivity," in Representations 40, pp. 81-128.

For the research on IMAGE AND DIAGRAMMATIC THINKING, we will take as a major reference the work of Michael Hoffman (invited consultant):

HOFFMAN, M. (2001), "Peirce´s ´Diagrammatic Reasoning´ as a solution of the learning paradox", in Process Pragmatism: Essays on a Quiet Philosophical revolution, Amsterdam , pp. 121-143´
HOFFMAN, M. (2004), "How to get it. Diagrammatic Reasoning as a Tool of Knowledge Development and its Pragmatic Dimension", Foundation of Science, 9, pp. 285-305.

On the diagrammatic reasoning in Peirce, we will also start on the basis of

KENT, B. (1997), "The Interconnectedness of Peirce´s Diagrammatic Thought " in Studies in the logic of Charles Sanders Peirce, Indiana, pp. 445-459,
KETNER, K. (1986) "Peirce´s Most Lucid and Interesting Paper: an Introduction to Cenopythagoreanism", International Philosophical Quarterly, 26, pp. 375-392.

But we will also pay attention to
STRAFFORD, B. (1999), Visual analogy. Counsciousness and the art of connecting, MIT Press, London,
TUFTE, E. R. (1983), The visual display of quantitative information, Graphics Press, Cheshire.

For the leibnizian roots of diagrammatic thinking, the major references will be:
POMBO, O. (1987), Leibniz and the problem of a universal language, Münster: Nodus Publikationen, l987
ID (1990), The leibnizian theory of representativity of the sign, in Niederehe, Hans-Joseph and Koerner, Konrad (eds), History and Historiography of Linguistics, vol. II, Amsterdam / Philadelphia: John Benjamins, pp. 447- 459
ID (1996) Leibnizian strategies for the semantical foundation of the universal language, in Klaus D. Dutz e Stefano Gensini (eds.) Im Spiegel des Verstandes. Studien zu Leibniz, Münster, 161-171
ID (1998), La théorie leibnizienne de la pensée aveugle en tant que perspective sur quelques-unes des apories linguistiques de la modernité, Cahiers Ferdinand Saussure, n.º 51, 63-75

The investigation on the turn FROM WORD CIVILIZATION TO IMAGE CIVILIZATION will be grounded in the following inescapable works of reference:

MCLUHAN, M.; FIORE, Q.; AGEL, J., (1967), The Medium is the Massage: An Inventory of Effects, New York.
VIRILIO, P. (1988), La Machine de Vision: Essai sur les Nouvelles Techniques de Représentation, Galilée, Paris.
LÉVY, P. (1994), L'Intelligence Collective. Pour une Anthropologie du Cyberspace, La Découverte, Paris.
SARTORI, G. (1998), Homo Videns : Televisione e Post-Pensiero, Laterza, Roma / Bari.

Regarding the PHILOSOPHICAL STUDIES ON IMAGE BETWEEN ART AND SCIENCE (ON THE POETICS OF BACHELARD AND THE AESTHETICS OF DELEUZE), among the vast bibliography on the sybject we may mention:

BACHELARD, G. (1942), L´eau et les rêves : essai sur l´imagination de la matière, José Corti, Paris.
BACHELARD, G. (1948), La terre et les rêveries du repos : essai sur les images de l´intimité, José Corti, Paris.
BACHELARD, G. (1957), La Poétique de l´Espace, P.U.F., Paris.
GIL, D. (1993), Bachelard et la culture scientifique, P.U.F, Paris.
GAGEY, J. (1969), Gaston Bachelard ou la conversion à l'imaginaire, Marcel Rivière et Cie., Paris.
DELEUZE, G. (1988), Le Pli - Leibniz et le baroque, Minuit, Paris.
DELEUZE, G. (1981), Francis Bacon, logique de la sensation, Edition de la différence, Paris.
DELEUZE, G. (1983-85), Cinéma 1 and Cinéma 2, Minuit, Paris.
RODOWICK, D.N., (ed.) (1997), Gilles Deleuze. Philosopher of the Image. Iris 23, no. 1 (Special Monographic Issue).

For the research on THE ART OF SCIENTIFIC IMAGE, we will begin considering the following works:

HARRIS, H. (1979), Scientific models and man, Clarendon Press/Oxford Univ. Press, New York/Oxford.
FORD, B. (1992), Images of Science. A History of Scientific Illustration, British Library, London.

Then we will examine two remarkable Portuguese exhibition catalogues:

VALENTE ALVES, M. e BARBOSA, A. (ed) (2004), Circulação/Circulation, Lisboa.
VALENTE ALVES, M., (2005). Passagens. 100 Peças para o Museu de Medicina, Lisboa.

The HISTORICAL STUDIES ON IMAGE BETWEEN ART AND SCIENCE aim at studying some major works by Leonardo, Vesalius, Goethe and Darwin, in its relation with the aesthetics and the scientific knowledge of their time and will take into account the following books:

LEONARDO DA VINCI (2002), Scritti [1512], editado por Carlo VECCE, Mursia, Milano.
VECCE, C. (2005), Leonardo da Vinci, Verbo, Lisboa.
VIATTE, F. e FORCIONE, V. (2003), Léonard de Vinci : dessins et manuscrits, Ed. Musée du Louvre, Paris.
KEMP, M. (ed.) (2001), Leonardo on painting, Yale Univ. Press, New Haven.

VESALIUS, De humani corporis fabrica [1543], Bâle, Johannes Oporinus, 2nd edition, 1555.
CUSHING, H. W. (1986), A Bio-Bibliography of Andreas Vesalius, St. Paul´s Bibliographies, Winchester.

DARWIN, C. (1872), The Expression of the Emotions in Man and Animals, John Murray, London.
PRODGER, P. (1998), "Illustration as Strategy in Charles Darwin´s ´The Expression of the Emotions in Man and Animals´", in Timothy Lenoir (ed), Inscribing Science, Stanford, pp.140-181.
SMITH, J. (2006), Charles Darwin and Victorian Visual Culture, Cambridge Univ. Press, Cambridge/NY.

GOETHE, J. W. (2003), A Metamorfose das Plantas, trad. de F. Molder, IN - Casa da Moeda, Lisboa.
F. MOLDER (1995), O Pensamento Morfológico de Goethe, IN - Casa da Moeda, Lisboa.

Our research on scientific drawing (DRAWING SCIENCE), will start from these works:

MITCHELL, W.J.T. (1998), The Last Dinosaur Book. The Life and Times of a Cultural Icon, Univ. of Chicago Press, Chicago.
SALGADO, P. (2001), O desenho científico - ilustração botânica, in A Natureza Mestra das Artes, Casa da Cerca - Centro de Arte Contemporânea.
SALGADO, P. (1999), Histórias de ilustração e de História Natural, in Instantes, Escola Superior de Arte e Design, Lisboa.
SALGADO, P. (1998), A arte de comunicar ciência, Catálogo oficial do Pavilhão dos Oceanos, EXPO´98, Lisboa.
ZWEIFEL, F. W. (1988), A Handbook of Biological Illustration, Univ. Of Chicago Press, Chicago.

The theoric foundation for the study of the ANATOMICAL DRAWINGS of the Lisbon Museum of Medicine must include the following works:

OLMI, G. (2004), Rappresentare il corpo. Arte e anatomia da Leonardo all´Illuminismo, Bononia Univ. Press, Bologna.
SMITH, R. (1996), Desenhar a figura humana, Editorial Presença, Lisboa.
GORDON, L. (1979), Desenho Anatómico, Editorial Presença, Lisboa.
HIRSCH, G. (1950), Art Anatomy and figure drawing. A study of the human figure, Major Book Co., New York.

The fundamental works of reference for the survey on nude model drawing (DRAWING THE NUDE) are:

BRANCO, C., (2005), O gesto capaz de esculpir a palavra, in M. Valente Alves (ed), Passagens. 100 Peças para o Museu de Medicina, Museu Nac. de Arte Antiga,
TAVARES, C. A., (1989), Da clarividência do desenho ao desenho clarividente, in Ver desenho hoje III / As irresoluções resolvidas, Galeria Mun. de Arte de Almada.
ID., (2001), As artes plásticas em Portugal no séc. XX, in Silvia Ferrari, Guia de História da Arte Contemporânea, Lisboa.
ID., (2002), Miguel Lupi e a figura como condição da prática artística, in Catálogo da Exposição Miguel Ângelo Lupi, Museu do Chiado, 2002.
ID., (2005), Malhoa e Bordalo in catálogo da Exposição Malhoa e Bordalo confluências duma geração, Museu de José Malhoa, Caldas da Rainha.

Our investigation on NEUROESTHETICS will begin with a thorough consideration of the seminal works in the area:

KOSSLYN, S. (1996), Image and Brain, MIT Press, Cambridge,
ZEKI, S. (1993), Vision of the Brain, Blackwell Science, Oxford,
ZEKI, S. (1999), Inner Vision. An Exploration of Art and the Brain, Oxford Univ. Press, Oxford / New York,
RAMACHANDRAN, V. S. and HIRSTEIN, W. (1999), "The Science of Art: A Neurological Theory of Aesthetic Experience", Journal of Consciousness Studies, 6, pp. 15 - 51.
LIVINGSTONE, M. S. (2002), Vision and Art: The Biology of Seeing, Harry N. Abrams, New York.

### 8.4. Resultados e Repercussões
### 8.4. Results and Repercussions
#### Divulgação de Resultados (descrição)
#### Diffusion of Results (description)

The results will be diffused by the publication of several BOOKS and ARTICLES, by the organization of PUBLIC CONFERENCIES and WORKSHOPS, by the organization of a final INTERNATIONAL COLLOQUIUM on "Image in Science and Art" to be held in 2010 together with a large EXIBITION of Portuguese scientific drawings together with exemplars of the collections of anatomical drawings (Museum of Medicine) and nude drawings (Lisbon Fine Art School).
A WEBPAGE will be put forward in connection with the webpage of the Museum of Medicine in witch will be put forward a large image data-base: LISBON CENTER OF IMAGE BETWEEN SCIENCE AND ART

#### Repercussões (descrição)
#### Repercussions (description)

- A new light onto the philosophy of image (task 1)
- A new light on the problem of the diagrammatic thinking (task 2)
- A contribution to a deeper evaluation of the new status and function of image in our civilization (task 3)
- A contribution to the Aesthetics of Image (Bachelard, Deleuze)(task 4)
- A contribution to the History of Art studies (Leonardo, Vesalius, Goethe, Darwin) (task 5)
- A new light in the epistemology and philosophy of science, namely on the cognitive and communicative dimension of image in science, scientific imagery, scientific model (task 6)
- The development of the study of the Portuguese scientific drawings (task 7)
- A deep contribution to the study of the collection of the anatomical drawings from the Museum of Medicine of the University of Lisbon (task 8)
- An innovative approach to the comparative study of the body concept in art and science (the nude and the anatomical drawings from the Lisbon Art School and the Museum of Medicine)(task 9)
- A contribution to the Neuroaesthetics recent developments (task 10)
- A contribution to the development of an interdisciplinary perspective of image both in art, in science and in philosophy (all tasks mainly task 11)
- A contribution to the connection of the artistic, scientific and philosophical communities in Portugal (all tasks mainly task 11)

### 8.5. Regionalização
### 8.5. Regionalization

| Região | Percentagem |
|---|---|
| Region | Percent |
| Norte | 14 |
| Centro | 14 |
| Lisboa e Vale do Tejo | 16 |
| Alentejo | 14 |
| Algarve | 14 |
| Região Autónoma dos Açores | 14 |
| Região Autónoma da Madeira | 14 |

Descrição
Description
The research to be done at the project has general and national scope. Further, the dissemination of results is intended to have a national repercussion among both scholars and general public. This project will intertwine both the scientific and the artistic communities.

### 8.6. Tarefas

**8.6. Tasks**

**Lista de tarefas** (11)
**Task list** (11)

| Designação da tarefa ℹ️ | Data de início | Data de fim | Pessoas * mês ℹ️ |
|---|---|---|---|
| Task denomination | Start date | End date | Person * months |
| 1 - Towards a Philosophy of Image | 01-01-2007 | 31-12-2009 | 16,2 |
| 3 - From Word Civilization to Image Civi… | 01-01-2007 | 31-12-2009 | 11,5 |
| 5 - Historical studies on Image between … | 01-01-2007 | 31-12-2009 | 28,8 |
| 7 - Drawing Science | 01-01-2007 | 31-12-2009 | 34,2 |
| 6 - The Art of Scientific Image | 01-01-2007 | 31-12-2009 | 28,8 |
| 10 - Neuroaesthetics | 01-01-2007 | 31-12-2009 | 12,6 |
| 2 - Image and Diagrammatic Thinking | 01-01-2007 | 31-12-2009 | 14,4 |
| 8 - Anatomical Drawings in the collectio… | 01-01-2007 | 31-12-2009 | 45 |
| 9 - Drawing the Nude | 01-01-2007 | 31-12-2009 | 14,4 |
| 11 - Crossings | 01-01-2007 | 31-12-2009 | 66,6 |
| 4 - Philosophical Studies on Image betwe… | 01-01-2007 | 31-12-2009 | 16,2 |

*(Os detalhes de cada tarefa estão disponíveis clicando na designação correspondente)*
*(Details for each task are available by clicking on the corresponding denomination)*

**8.7. Referências Bibliográficas**
**8.7. Bibliographic references**

| Ano | Publicação |
|---|---|
| Year | Publication |
| 1997 | O. POMBO, Leibniz and the Problem of a Universal Language, Münster: Nodus Publikationen, 321 pp. |
| 1998 | O. POMBO, La Théorie Leibnizienne de la Pensée Aveugle en tant que Perspective sur quelques-unes des Apories Linguistiques de la Modernité, Cahiers Ferdinand Saussure, nº 51, pp. 63-75. |
| 1995 | F. MOLDER, O Pensamento Morfológico de Goethe, Lisboa: Imprensa Nacional - Casa da Moeda |
| 2006 | D. SCARSO, Fórmulas e Arquétipos, Aby Warburg e Carl G. Jung, in O.Pombo, A. Guerreiro e A.F. Alexandre (erds) Enciclopédia e Hipertexto, Lisboa: Duarte Reis, pp. 537-553 |
| 2005 | M. Valente Alves, Passagens. 100 Peças para o Museu de Medicina, Lisboa: Museu de Medicina (FM/UL) e Museu Nacional de Arte Antiga, 304 pp. |

**8.8. Artigos Anteriores**
**8.8. Previous Articles**

| Ano | Artigo (endereço na *Internet* - URL) |
|---|---|
| Year | Paper (Link in the Internet - URL) |
| 1987 | http://www.educ.fc.ul.pt/docentes/opombo/leibniz/leibnizcont.htm |
| 1998 | http://www.educ.fc.ul.pt/docentes/opombo/publicacoes%20opombo/pensee_aveugle.pdf |
| 0 | *(vazio)* *(void)* |
| 2006 | http://www.educ.fc.ul.pt/hyper/resources/dscarso/index.htm |
| 2005 | http://www.museudemedicina.fm.ul.pt/UserFiles/File/PRESS%20RELEASE.pdf |

9. Ficheiros Anexos
9. Attachments

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