

Ministério da Justiça
Tribunal Administrativo e Fiscal de Coimbra

Comprovativo de entrega de Documento

Número do Registo	93163
Número do Processo	333/11.0BECBR
Matéria	Administrativa
Nome do Apresentante	Fundação para a Ciência e Tecnologia, I.P.
Tipo de Registo	Processos
Via de Apresentação	Correio
Tipo do Documento	Contestação
Estado do Registo	Por tratar
DUC	-
Observações	-

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FCT Fundação para a Ciência e a Tecnologia

TRIBUNAL: Tribunal Administrativo e Fiscal de Coimbra.

PROCESSO: 333/11.0BECBR.

ARTICULADO: Contestação.

VALOR: 30. 001,00 Euros (trinta mil e um euros).

JUNTA: Despacho de designação de Jurista, Processo Administrativo, Regulamento de Formação Avançada e Qualificação de Recursos Humanos de 2008 e 2010, Guia de Avaliação – doc. nº 1, N/ ofício nº 023512 – doc. nº 2.

AUTOR: Paul Colin Gloster.

RÉ: Fundação para a Ciência e Tecnologia, I.P.



FCT/4160/11/7/2011/S

Exmo. Sr. Meritíssimo Juiz de Direito do Tribunal Administrativo e Fiscal de Coimbra

A FUNDAÇÃO PARA A CIÊNCIA E TECNOLOGIA, I.P., NIPC 503904040, com sede na Avenida D. Carlos I, 126, em Lisboa, vem, na acção administrativa especial, supra melhor identificada, intentada por **PAUL COLIN GLOSTER**, oferecer o seu articulado de

CONTESTAÇÃO,

ao abrigo do estipulado no artigo 83º do CPTA, o que faz nos seguintes termos e fundamentos:

1º

Aceita-se o vertido nos artigos 1 a 8, 10, 40, 41, 44, 49, 50 e 54 da Petição Inicial (PI).

2º

Contesta-se nos termos infra os artigos 9,11, 12 a 40, 42,43,45 a 48, 51 a 53 da PI.

I- DEFESA POR EXCEPÇÃO:

3º

O A. foi opositor em 2008, ao Concurso Público da R. para atribuição de bolsas individuais de doutoramento.

4º

À candidatura foi dada a referência SFRH/BD/46372/2008.



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5º

À candidatura foi atribuída uma **classificação de 3, numa escala de 0 a 5**, conforme documento a fls. 55, do Processo Administrativo (PA).

6º

Em **2008/12/09**, foi o A. notificado, em fase de audiência prévia, nos termos dos artigos 100º e 101º do CPA, do projecto de decisão de não atribuição de bolsa, conforme documento constante a fls. 56. do PA.

7º

Em **2008/12/16**, o A. exerceu o seu direito de participação procedimental, conforme documento nº 58 do PA.

8º

Em **2009/02/09**, foi o A. notificando da decisão de não atribuição de bolsa, conforme documento a fls. 59 do PA.

9º

Reclamou o A. da decisão final, nos termos nº 4 do art. 24º do Regulamento de Formação Avançada e de Qualificação de Recursos Humanos de 2008 (**RFAQRH 2008**).

10º

A reclamação foi indeferida e mantida a classificação de 3 ao A., o que implicava a não concessão de bolsa, **dado que a linha de concessão de bolsa fixou-se em 4.**

11º

O acto administrativo definitivo, consubstanciando na decisão final de não atribuição de bolsa, foi notificado ao A. em **2009/07/20**, conforme documento a fls. 60 do PA.

12º

O prazo de impugnação judicial iniciou-se em **2009/09/01**, tendo-se suspenso em férias judiciais, no período ocorrido entre 2009/07/20 (data da notificação da decisão) e 2009/08/31.

13º

Assim, o prazo de impugnação judicial terminou em **2009/11/30**, nos termos conjugados da alínea b) do nº 2 do art. 58º e do nº 1 do art. 59º, ambos do CPTA.

14º

Dado que a acção em causa foi intentada a **2010/05/09**, mostra-se manifestamente extemporânea, uma vez que foi deduzida para além do prazo disponível para o efeito, que terminou em **2009/11/30**.

15º

Tal facto, obsta ao prosseguimento do processo, pelo que ao abrigo da alínea h) do nº 1 do art. 89º do CPTA, deve a presente acção ser rejeitada.



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16º

Não tendo o acto administrativo sido objecto de impugnação contenciosa, consolida-se na ordem jurídica, passando a constituir caso resolvido ou caso decidido com valor de caso julgado. AC de 20.01.1987].

Subsidiariamente,

II- DEFESA POR IMPUGNAÇÃO:

A) Quanto ao Concurso de atribuição de bolsas de doutoramento de 2008:

17º

No âmbito do concurso de atribuição de bolsas de doutoramento são critérios de avaliação os que se encontram no Guia de Avaliação, que se junta como doc. nº 1, a saber: Mérito do Candidato, Mérito do Plano de Trabalhos e Mérito das Condições de Acolhimento.

18º

O A., discorda, da classificação obtida no critério Mérito do Candidato.

19º

Classificação essa que foi de 2 em 5, nos termos do Guião de Avaliação.

20º

Ora o A. possui formação académica realizada no estrangeiro.

21º

Tal matéria, está prevista no Guião de Avaliação de 2008, que estabelece “o Painel de Avaliação deverá procurar estabelecer uma equivalência entre a classificação obtida pelo candidato e o sistema de classificação em vigor em Portugal”.

22º

À luz do disposto no Estatuto do Bolseiro de Investigação, aprovado pela Lei nº 40/2004, de 18 de Agosto, e que abrange as bolsas destinadas a financiar, entre outros, “trabalhos de investigação tendentes à obtenção de grau ou diploma académico pós-graduado”, as “categorias de destinatários” do financiamento em causa, constam do regulamento próprio de concessão da bolsa, **vide artigos 2º nº 1 alínea a), 6º nº 1 alínea c) daquele Estatuto.**

23º

Determina o Regulamento de Formação Avançada e Qualificação de Recursos Humanos, que podem candidatar-se a bolsas de doutoramentos “ quem satisfaça as condições previstas no nº 1 do art. 30º do D.L nº 74/2006, de 24 de Março e no art. 17º deste regulamento”.



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24º

Conclui-se assim que a R. admite como candidatos a uma bolsa de doutoramento, todos aqueles que reúnem já os requisitos académicos e/ou curriculares para o acesso ao ciclo de estudos conducentes ao grau de doutor.

25º

No que toca a potenciais candidatos com formação académica obtida no estrangeiro, o RFAQRH **é omissivo quanto à questão do reconhecimento/equivalência dessas mesmas habilitações, sendo que**

26º

inexiste ao nível da União Europeia, diferentemente do que ocorre no domínio do reconhecimento de habilitações profissionais para o exercício de certas profissões – um princípio geral de reconhecimento automático de diplomas, pelo que revelam as competências dos Estados Membros para decidir se e em que termos pode ter lugar o reconhecimento de qualificações académicas obtidas no estrangeiro.

27º

Em Portugal, esse reconhecimento vem disciplinado no D.L. nº 341/2007, de 12 de Outubro, diploma que instituiu um novo regime jurídico na matéria.

28º

Quanto aos graus académicos estrangeiros que não tenham sido, nestes termos, genericamente reconhecidos, mantém-se em vigor o D.L. nº 283/83, de 21 de Junho, com as alterações introduzidas pelo D.L. nº 341/2007.

29º

Este regime estabelece um mecanismo de equivalência/reconhecimento de habilitações estrangeiras de nível superior às correspondentes habilitações portuguesas, com base numa reavaliação, caso a caso, do mérito científico dos requerentes, **da exclusiva competência das instituições do ensino superior.**

30º

Note-se que o legislador ressalvou a possibilidade de os titulares de equivalência ou reconhecimento obtidos ao abrigo do D.L. nº 283/83, requererem o reconhecimento ao abrigo do novo regime jurídico do novo regime jurídico vertido no D.L. nº 341/2007.

31º

Dada a ausência de norma que proíba a R, no caso de um candidato com formação académica realizada no estrangeiro, de admitir e avaliar a respectiva candidatura a uma bolsa individual por si financiada, sem que o A. tenha promovido o procedimento interno de que depende, por força da lei, a produção da totalidade dos efeitos do reconhecimento/equivalência das suas habilitações, **incluindo da respectiva classificação final.**



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32º

A prática da R. – de admitir e avaliar candidaturas sem que os candidatos apresentem o reconhecimento/equivalência das suas habilitações, implica que nessa situação cabe ao painel de avaliação procurar estabelecer uma equivalência entre a classificação obtida pelo candidato e o sistema de classificação em vigor em Portugal,

33º

O que releva uma perspectiva de abertura e actuação mais favorável, não tornando assim inadmissível uma candidatura a bolsa de investigação de um candidato que não possui o reconhecimento/equivalência das suas habilitações estrangeiras, possibilitando-lhe então o acesso ao financiamento pretendido.

34º

Não está em causa, ser a própria R. a conceder equivalência a determinado grau ou a proceder ao reconhecimento de um grau académico superior estrangeiro, incluindo a respectiva classificação final,

35º

mas muito distinta e tão-somente, avaliar através de painel de peritos independentes, para fins exclusivos de concessão de uma bolsa de investigação e em dada situação em concreto, o mérito do candidato,

36º

revelado também em uma habilitação académica obtida no estrangeiro, e ponderado conjuntamente com os outros critérios predefinidos de avaliação de candidaturas.

37º

Está em causa a R. conceder a possibilidade a candidatos com habilitações obtidas no estrangeiro de serem opositores ao concurso de atribuição de bolsa por si financiadas, sem que esses mesmos candidatos, tenham desencadeado e/ou apresentado o reconhecimento/equivalência das suas habilitações, nos termos do regime legal descrito.

38º

Desta forma, refuta-se totalmente a alegada incompetência na operação alegada pelo A,

39º

dado que a R. não concedeu equivalência a determinado grau ou a proceder ao reconhecimento de um grau académico superior estrangeiro, incluindo a respectiva classificação final,

40º

mas muito distinta e tão-somente, avaliar através de painel de peritos independentes, para fins exclusivos de concessão de uma bolsa de investigação e em dada situação em concreto, o mérito do candidato, revelado também em uma habilitação académica obtida no estrangeiro, e ponderado conjuntamente com os outros critérios predefinidos de avaliação de candidaturas.



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41º

Assim, operou o Painel de Avaliação, o seguinte sistema de equivalência entre a classificação obtida pelo candidato e o sistema de classificação em vigor em Portugal, recorda-se que tão-somente para efeitos de concessão de bolsa de investigação,

42º

considerando uma classificação final de 12 valores, na sua licenciatura, que levou o candidato a obter no parâmetro "Mérito do Candidato", a classificação de 2.

43º

Invocou o candidato a incompetência e consequente nulidade do acto administrativo e requereu a revogação do mesmo, por parte da R.,

44º

foi notificado do seu indeferimento, pelo n/ofício nº 023512, que se junta como doc. nº 2, para os devidos efeitos.

45º

Se a R., levasse em linha de conta os fundamentos aduzidos pelo A., designadamente a incompetência para proceder à equivalência, para efeitos de concessão da bolsa, **então**

46º

em última instância, não seria ao A. possível concorrer à atribuição de bolsas da R., **por falta de habilitações!**

47º

Conclui-se assim pela validade do acto ora em crise, pelos fundamentos supra aduzidos.

B) Quanto ao Concurso de atribuição de bolsas de doutoramento de 2010:

48º

Em 2010 apresentou o A. nova candidatura.

49º

Não foi concedida bolsa, dado que o A. obteve a classificação final de **4,0, sendo que a linha de corte na sua área científica foi de 4,17.**

50º

Continua o A., em 2010, sem ver reconhecida a sua habilitação para efeitos de licenciatura, nos termos do regime legal previsto e já explicitado!

51º

Não obstante, apresentou uma fundamentação, onde se infere que é parecer da Faculdade de Ciências e Tecnologia da Universidade de Coimbra, que *considera que deve ser atribuído o*



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reconhecimento de habilitações ao nível de licenciatura em Engenharia Informática, com 16 valores, a Colin Paul Gloster, conforme documento constante a fls. 62 do PA de 2010.

52º

Tal não vale enquanto reconhecimento oficial de grau académico, nos termos legais.

53º

Não obstante, o Painel de Avaliação, mais uma vez, e ao abrigo da prerrogativa já explicitada, nos artigos 21º a 33º da presente contestação,

54º

admitiu e avaliou a candidatura do A.,

55º

sendo que levou em linha de conta o parecer apresentado pelo A, **para efeitos de aferição do parâmetro Mérito do Candidato, quando**

56º

nada o obrigava, legal ou factualmente,

57º

ou seja poderia a R. não ter considerado o parecer citado, dado que não se trata de um reconhecimento do grau e classificação no quadro legal estipulado, **mas antes um parecer, que até a presente data não sabe a R. se colheu ou não!**

58º

Seguindo agora a linha de fundamentação do A. não poderia então a R., classificar/avaliar o A. por incompetência absoluta, atribuindo-lhe a nota de 4, derivada da licenciatura com média 16!

59º

Mais se refere que não se trata de uma questão de admissibilidade ao concurso, conforme invoca o A. no seu pedido, **mas antes**

60º

sendo o A. admitido sempre a concurso (2008 e 2010), apesar de não ser possuidor de reconhecimento de habilitação, não se conformou com o resultado de não concessão da bolsa, por não atingir a classificação mínima de atribuição das mesmas (4 em 2008 e 4,17 em 2011).

61º

Pelo acima exposto fica prejudicada e afastada a contestação ao pedido de indemnização efectuado pelo A., nos termos do nº 3 do art. 3º da Lei nº 67/2007, de 31 de Dezembro.



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CONCLUSÕES:

- 1 - O acto administrativo definitivo, consubstanciando na decisão final de não atribuição de bolsa, foi notificado ao A. em **2009/07/20**, conforme documento a fls. 60 do PA.
- 2 - O prazo de impugnação judicial iniciou-se em **2009/09/01**, tendo-se suspenso em férias judiciais, no período ocorrido entre 2009/07/20 (data da notificação da decisão) e 2009/08/31.
- 3 - Assim, o prazo de impugnação judicial terminou em **2009/11/30**, nos termos conjugados da alínea b) do nº 2 do art. 58º e do nº 1 do art. 59º, ambos do CPTA.
- 4 - Dado que a acção em causa foi intentada a **2010/05/09**, mostra-se manifestamente extemporânea, uma vez que foi deduzida para além do prazo disponível para o efeito, que terminou em **2009/11/30**.
- 5 - Tal facto, obsta ao prosseguimento do processo, pelo que ao abrigo da alínea h) do nº 1 do art. 89º do CPTA, deve a presente acção ser rejeitada.
- 6 – **Subsidiariamente,**
- 7 - O A. foi opositor em 2008, ao Concurso Público da R. para atribuição de bolsas individuais de doutoramento.
- 8 – Não apresentou o A. reconhecimento legalmente válido da sua habilitação literária, obtida no estrangeiro.
- 9 – *Estipula o Guião de Avaliação que o Painel de Avaliação deverá procurar estabelecer uma equivalência entre a classificação obtida pelo candidato e o sistema de classificação em vigor em Portugal.*
- 10 – Obteve o A., no parâmetro de avaliação Mérito do Candidato, a classificação de 2 em 2008 e de 4 em 2010.
- 11 – Tais actos não padecem de nulidade, por incompetência absoluta, dado que
- 12 - Não está em causa, ser a própria R. a conceder equivalência a determinado grau ou a proceder ao reconhecimento de um grau académico superior estrangeiro, incluindo a respectiva classificação final,
- 13 - mas muito distinta e tão-somente, avaliar através de painel de peritos independentes, para fins exclusivos de concessão de uma bolsa de investigação e em dada situação em concreto, o mérito do candidato,
- 14 - revelado também em uma habilitação académica obtida no estrangeiro, e ponderado conjuntamente com os outros critérios predefinidos de avaliação de candidaturas.



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PELO QUE E NOS MELHORES DOS DIREITOS

Deverá a presente acção ser considerada improcedente, por não provada, absolvendo-se a R. do pedido de indemnização e de anulabilidade dos actos ora em crise, mantendo-se os mesmos como válidos e eficazes.

O licenciado em Direito designado em representação da entidade requerida,
(art. 11.º, n.º 2, do CPTA):

Paulo Ricardo Novais Vilas Boas

**Isento de Pagamento Prévio de Taxa de Justiça, nos termos da alinea a) do artigo 15º do
Regulamento do Código das Custas Judiciais**



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MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

DESPACHO
Presidente do
Conselho Directivo

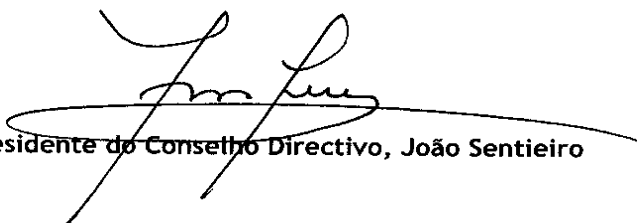
DESIGNAÇÃO FORENSE

PROFESSOR DOUTOR JOÃO JOSÉ DOS SANTOS SENTIEIRO, Presidente do Conselho Directivo da Fundação para a Ciência e a Tecnologia, IP, pessoa colectiva nº 5039040440, com instalações na Avenida D. Carlos I, nº 126, em Lisboa,

DESIGNA

nos termos do nº 2 e 3 do artigo 11º do CPTA, como representante em juízo, o Licenciado em Direito, **PAULO RICARDO NOVAIS VILAS BOAS**, Assessor Jurídico da Fundação para a Ciência e a Tecnologia, a quem confere os mais amplos poderes, gerais e especiais, no processo nº **333/11.OBECBR**, que corre os seus termos no Tribunal Administrativo e Fiscal de Coimbra.

Fundação para a Ciência e Tecnologia, 29 de Junho de 2011.


O Presidente do Conselho Directivo, João Sentieiro



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MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

**Processo Administrativo – Concurso de atribuição de bolsas de doutoramento
e pós doutoramento 2008
(art. 84º do CPTA)**

----- Declara-se para os devidos efeitos, que segue em anexo, *Processo Administrativo do candidato PAUL COLIN GLOSTER*, constituído por sessenta e cinco folhas, certificadas pelo selo branco em uso, nesta Instituição. -----

Lisboa, 8 de Julho de 2011. -----

O Jurista, Paulo Ricardo Novais Vilas Boas, Paulo Ricardo Novais Vilas Boas

Dados para a Candidatura: SFRH/BD/46372/2008 (Bolsa de Doutoramento)

Nome do Candidato: Nicholas Collin Paul Gloucester

Domínio Científico: Física

Dados da Candidatura:

Informações sobre a candidatura

Tipo de bolsa: Bolsa de Doutoramento

Domínio científico principal: Física

Local de Realização: No país

Orientador(es) como indicado(s) pelo candidato:

Orientador Maria Filomena de Osório Pinto dos Santos Figueiredo
Universidade de Coimbra / Faculdade de Ciências e Tecnologia

Co-Orientador Rui Miguel Curado da Silva
Universidade de Coimbra / Faculdade de Ciências e Tecnologia

Curricula de Orientador(es):

Com base nas indicações do candidato o sistema notificou o(s) orientador(es) para se associarem à candidatura e fornecerem um currículo.

- [Rui Miguel Curado da Silva](#)
- [Maria Filomena de Osorio Pinto dos Santos](#)

(o nome do orientador é uma ligação ao respectivo CV)

Acolhimento

Instituição(ões) que confere(m) o Grau:

Universidade de Coimbra - Faculdade de Ciências e Tecnologia

Instituições de Acolhimento:

Instituição	Departamento	Centro de Investigação
Universidade de Coimbra	Grupo de Instrumentação Atómica e Nuclear, Departamento de Física	n/a

Endereço para Correspondência

Morada: Grupo de Instrumentação Atómica e Nuclear, Departamento de Física, Universidade de Coimbra, Rua Larga

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País: Portugal

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Colin_Paul_Gloster@ACM.org

Procurador do Candidato

Nome: n/a

Morada: n/a

Código-postal: n/a **Localidade:** n/a

País: n/a

Telefone (casa): **Telefone (emprego):** **Telefone (móvel):**

Fax: **E-mail Contacto:**
n/a [n/a](#)

Programa de Trabalhos

Título: CdTe Focal Plane for a Laue Lens Gamma-ray Space Telescope

Domínio Científico: Technological Physics

Data Início: (Programa Trabalhos) 01-06-2008 **Duração: (meses)** 55

Data Início: (Bolsa) 01-01-2009 Duração: (meses) 48
Período de Permanência no Estrageiro n/a

Sumário

In order to explore the most relevant open issues in gamma-ray astronomy, the GRI (Gamma-Ray Imager) consortium is setting up a new gamma-ray space telescope mission proposal for the ESA Cosmic Vision program. This telescope presents a new concept based on Laue lens technology that focuses gamma rays by using Bragg diffraction in the volume of crystals, dramatically improving sensitivity by a factor of 10 to 100.

In the framework of the GRI mission proposal, a simulation software package based on Geant4 will be developed for the GRI focal plane instrument mass model. The simulation package must provide: different design configurations and dimensions; different types of gamma-ray source objects; accurate hadronic cross sections; an interface with Laue lens simulation data; prompt background noise caused by galactic cosmic ray proton interactions in the instrument; delayed background noise caused by material activation; diffuse cosmic X-ray background noise; and an event reconstruction package.

Estado da Arte:

INTEGRAL (INTErnational Gamma-Ray Astrophysics Laboratory) of the European Space Agency (ESA) is the most powerful gamma-ray space telescope ever launched [1,2]. INTEGRAL discovered many phenomena [3]. Focusing gamma-rays would provide high sensitivity and improve the signal to noise ratio, however INTEGRAL does not have any focusing system.

The Gamma-Ray Imager (GRI) mission presented herein stands as an important step in gamma-ray astronomy because GRI is designed to boast a Laue lens together with an optimized CdTe stack instrument which would focus gamma rays and therefore allow zooming and identifying the gamma-ray sources and studying their emission mechanisms [4]. A proof of concept of a Laue lens for gamma-ray astronomy was performed by the French CLAIRE balloon project as mentioned in [14].

Gamma-ray polarimetry had not progressed significantly in astrophysics. In fact, not one dedicated polarimeter has ever been launched as a satellite- nor balloon-borne experiment, despite polarimetric information associated with radiation emissions being an additional parameter that would improve models describing objects like gamma-ray bursts, active galactic nuclei or pulsars. Indeed for those few instruments which are capable of performing polarimetric measurement, polarimetry itself plays a secondary role in the mission schedule, the main purpose of these instruments is generally to perform imaging and timing analysis of celestial sources. This is the case for the COMPTEL (imaging COMPTon TELEscope) instrument on board CGRO (Compton Gamma-Ray Observatory) [5] and the IBIS on board INTEGRAL [6]. The RHESSI satellite included a polarimeter (using a beryllium scatterer between the detection units) but it was designed for solar observations [7].

The POLCA (POLarimetry with Cadmium telluride Array) experiment, carried out at the European Radiation Synchrotron Facility, Grenoble, France, showed that a CdTe polarimeter prototype under an almost 100% polarized beam (100 to 400 keV), is potentially capable of performing polarimetric measurements with the required performances for a space-based mission [8]. An experiment by Kroeger et al. showed the validity of a laboratory polarimeter using diffraction techniques to obtain partially polarized beams, in the framework of the GIPSI (Gamma-ray Instrument for Polarimetry, Spectroscopy, and Imaging) project [9]. GRI would be the first gamma-ray mission where the instrument design will be optimized to perform polarimetric measurements. A minimum detectable polarization of 5% for a 10 mCrab source type for 10E-6 seconds of observation time is expected.

Geant4 is a largely C++-based software library originated from CERN that simulates particle interactions with matter, that has been used in the simulation of the gamma-ray instrument's mass model [11, 13]. MGGPOD is a software package based on the previous GEANT3 (written in FORTRAN) that allows complementary functionalities such as the simulations of cosmic and instrumental backgrounds arising from interactions of the various elements of the instruments and the spacecraft materials [15]. This software will be exported to Geant4 with participation of the applicant. SPENVIS (SPace ENVIRONMENT Information System) is another relevant software suite for space astrophysics that simulates effects of space environments on a spacecraft. SPENVIS was developed by the Belgian Institute for Space Aeronomy under ESA supervision.

Objetivos:

The Gamma-Ray Imager (GRI) mission would explore fundamental questions of modern astrophysics related to the non-thermal Universe revealed by the gamma-ray energy band. Its novel gamma-ray focusing based on Laue lens technology would result in a more sensitive (10 to 100 times) gamma-ray instrument than on orbit today.

The Grupo de Instrumentação Atómica e Nuclear task is to develop the Laue lens focal plane instrument based on a CdTe stack detector. The task of the applicant is to develop simulation software, to be presented as part of the GRI mission proposal to ESA in circa 2011. This software is for the optimization of the CdTe focal plane instrument. It should reproduce an almost realistic response in the space environment.

The applicant must include prompt background noise due to galactic cosmic ray proton interactions in the instrument; delayed background noise due to material activation; and the diffuse cosmic X-ray background.

The applicant must determine the simulated background noise to decide the shielding required and because the inclusion of background noise in the simulation software is fundamental for the mass model simulation results to approach those that are expected to be obtained in a real space mission, since the overall background noise is in general much higher than the detected source emission flux.

The applicant shall develop associated Compton event reconstruction software which would be an important tool to select between incoming events from the gamma-ray astronomical source and the background noise.

The simulation package will have accurate radiation interaction with matter and nuclear physics. Necessary experiments for the hadronic cross section validation shall be performed at the Cyclotron Research Centre facilities in Louvain-la-Neuve, Belgium.

The software package will be developed during the whole thesis time scale while the experimental tests will be performed by the second semester of the second year.

Descrição Detalhada:

Several open issues in gamma-ray astronomy are still poorly known and understood, such as non-thermal mechanisms in supernova remnants, the high energy active galactic nuclei spectra cut-off, the detection of nuclear and annihilation lines and the gamma-ray polarization levels of emission sources like pulsars, gamma-ray bursts, solar flares, and black holes. In order to explore these astronomical issues the GRI (Gamma-Ray Imager) consortium proposes a new space telescope mission for the ESA (European Space Agency) Cosmic Vision 2015-2025 program - missions to be launched between 2015 and 2025 (fig. 1). ESA recognizes the importance of this mission (

[HTTP://sci.esa.int/science-e/www/object/index.cfm?fobjectid=36959](http://sci.esa.int/science-e/www/object/index.cfm?fobjectid=36959)

) due to its novel gamma-ray focusing concept based on Laue lens technology, since this would be the first space-based mission that will allow gamma-ray focusing in a broad energy band-pass (60-1000 keV). So far this energy range has been observed exclusively by using traditional collimated and/or coded mask instrumentation, which limits the telescope sensitivity. The GRI Laue lens focusing optics are potentially capable of improving detection sensitivity by a factor of 10 to 100 with respect to the past and ongoing gamma-ray space observatories. An important feature of GRI is sensitivity to polarization since it will be the first instrument conceived intentionally to perform this kind of measurement, its importance was confirmed in papers such as [15] and [19].

The GIAN (Grupo de Instrumentação Atómica e Nuclear), where this working programme will be conducted, is a GRI consortium member. Its main contribution to the mission is to develop the Laue lens focal plane instrument based on a CdTe stack detector (fig. 2). The performance of this instrument must meet the requirements established by the consortium: gamma-ray detection sensibility of 10^{-7} photons/(cm².s.keV), energy resolution of approximately 3%, and minimum detectable polarization lower than 5% for a 10 mCrab gamma-ray source equivalent, for 10^6 s observation times. The expected instrument mass model simulation results should fit these requirements. Furthermore, the instrument material and design must meet the exigent technical requirements of a space-based mission (vibrations, extreme temperatures, limited power consumption, etc.).

The research activities of the candidate consist of the optimization of the CdTe focal plane instrument in the framework of the Gamma-Ray Imager consortium by building a Monte Carlo simulation package capable of reproducing a nearly realistic response in the space environment. So far, the GIAN performed previous theoretical studies by means of a simulation code based on the Geant4 toolkit from CERN concerning the potential performances of CdTe instruments for different design configurations and dimensions, for different types of gamma-ray emissions (monochromatic beams, the Crab Nebula, gamma-ray bursts, etc.) and for different levels of photon beam polarization [11,13]. The aforementioned earlier simulation studies were partially experimentally verified through a set of CdTe matrix prototype experiments performed at the ERSF (European Radiation Synchrotron Facility), Grenoble, France, where these devices were tested under approximately 100% polarized monochromatic beams in the energy range 100-750 keV [12]. However, new and essential functionalities, that will be objectives of this research programme, must still be implemented in the instrument simulation mass model such as: interfacing with Laue lens simulation data, prompt background noise caused by galactic cosmic ray proton interactions in the instrument, delayed background noise caused by material activation, diffuse cosmic X-ray background noise and a Compton event reconstruction package. Through a collaborative work with the University of Ferrara, Italy, which has been developing the most recent Laue lens technology, the response of the Laue lens system to typical gamma-ray sources' emissions and the respective point spread function in the instrument detection plane as a function of the photons' energy will be implemented in the simulation model. Compton event reconstruction is an important tool to select between incoming events from a gamma-ray astronomical source and the background noise.

The inclusion of background noise in the simulation software is fundamental for the mass model simulation results to approach those that are expected to be obtained in a real space mission, since the overall background noise flux is in general much higher than the detected source emission flux. A planned sensitivity analysis of background noise levels in different orbits' radiation environments was mentioned in [16, Section 4 Conclusion]. The applicant used the SPace ENVIRONMENT Information System (SPENVIS) suite of radiation modeling software of ESA developed by the Belgian Institute for Space Aeronomy for his secondary degree [17,18].

In order to simulate accurately the nuclear processes involving proton interactions and material activation, it will be necessary to verify experimentally several Geant4 hadronic cross sections. The collaboration that has been established between the GIAN and the Center for Space Radiations based in the Cyclotron Research Centre facilities in Louvain-la-Neuve, Belgium, will permit access to its facilities in order to perform some necessary experiments for hadronic cross section validation.

Furthermore, the applicant will contribute to the improvement of the Geant4 toolkit, in particular to its maintainability deficiencies. The applicant already examined a significant part of Geant4 internal files (2007 release) and listed a number of major observed problems relating to: using the C++ preprocessor, pointers [20], conditional statements instead of dispatching, copying and pasting instead of arrays, postincrementing instead of preincrementing, independence where dependence is intrinsic, alternative names for the same action, redundant replications of defaults, a hard-coded constant magic number, or unused parameters.

This simulation software will be constantly upgraded in order to fit the mission conditions as closely as possible, when new concepts and new ideas will be incorporated in the instrument project by the theoretical and experimental members of the GRI consortium.

Anexos:

[Fig1.jpg](#)

[Fig2.jpg](#)

Referências:

References...

- [1] Gehrels, N. and Winkler, C., "INTEGRAL : the future ESA mission for gamma-ray astronomy", SPIE Proceedings, 2806, pp. 210-216 (1996).
- [2] Lebrun, F., Blondel, C., Fondeur, I., Goldwurm, A., Laurent and P., Leray, J., "ISGRI: a CdTe array imager for INTEGRAL", SPIE Proceedings on Gamma-Ray and Cosmic-Ray Detectors, Techniques, and Missions, 2806, pp. 258-268 (1996).
- [3] C. Winkler, J.-L. Courvoisier, G. Di Cocco et al., "The INTEGRAL mission", Astron. Astr., vol. 411, L1-L6, 2003.
- [4] E. Caroli, N. Auricchio, G. Bertuccio, C. Budtz-Jørgensen, R. M. Curado da Silva, S. Del Sordo, F. Frontera, E. Quadri, P. Ubertini, G. Ventura, "A focal plane detector design for a wide band Laue-lens telescope", SPIE Astronomical Telescopes and Instrumentation, Orlando, USA, 24-31 May 2006.
- [5] Schoenfelder, V. et al., "Instrument Description and performance of the Imaging Gamma-Ray Telescope COMPTEL aboard NASA's Compton Gamma Ray Observatory", Astrophys. J. Suppl., vol. 86, p. 657, 1993.
- [6] J. B. Stephen, E. Caroli, R. M. Curado da Silva and L. Foschini, "Gamma-ray polarisation measurements with INTEGRAL/IBIS", AIP Conference Proceedings series on Gamma-Ray Astrophysics, vol. 587, p. 816, 2001.
- [7] M. L. McConnell, J. M. Ryan, D. M. Smith, R. P. Lin, and A. G. Emslie, "RHESSI as a hard X-ray polarimeter", Solar Phys., vol. 210, pp. 125-142, 2002.
- [8] R. M. Curado da Silva, Ezio Caroli, M. Hage-Ali, J. B. Stephen, M. Ayoub, A. Donati, F. Schiavone, G. Ventura and P. Siffert, "Experimental polarimetric study of an hard X-ray energy telescope prototype", IEEE Trans. Nucl. Sci., vol. 50, no. 4, pp. 1198-1203, 2003.
- [9] Richard A. Kroeger, W. Neil Johnson, Robert L. Kinzer, James D. Kurfess, Susan E. Inderhees, Bernard F. Philips and Brad Graham, "Gamma-ray instrument for polarimetry, spectroscopy, and imaging (GIPSI)", SPIE Proceedings on Gamma-Ray and Cosmic-Ray Detectors, Techniques, and Missions, 2806, pp. 52-63, 1996.
- [10] J. Allison, et al., "Geant4 Developments and Applications", IEEE Transactions on Nuclear Science, February 2006
- [11] R. M. Curado da Silva, E. Caroli, J. B. Stephen and P. Siffert, "CIPHER, polarimeter telescope concept for Hard X-ray Astronomy", Experimental Astronomy, Vol. 15, no. 1, pages 45-65, 2003
- [12] R M Curado da Silva, E Caroli, J B Stephen, A Pisa, N Auricchio, S Del Sordo, F Frontera, V Honkimaki, F Schiavone, G Ventura, "Experimental polarimetric study of a gamma-ray CZT focal plane prototype", accepted for publication in J. Appl. Phys, 2008
- [13] R. M. Curado da Silva, E. Caroli, J. B. Stephen, N. F. C. Mendes, F. Frontera, "Polarimetric Performances of a Wide Field CdTe Monitor for X- and gamma-ray Astrophysics", IEEE Trans. Nucl. Sci. (2005), Vol. 53, no. 3, pages 383-388, 2006
- [14] Peter von Ballmoos, Hubert Halloin, Jean Evrard, Gerry Skinner, Nikolai Abrosimov, Jose Alvarez, Pierre Bastie, Bernard Hamelin, Margarida Hernanz, Pierre Jean, Juergen Knoedlseder and Bob Smither, "CLAIRE: First light for a gamma-ray lens", "Experimental Astronomy", December 2005, DOI 10.1007/s10686-006-9071-0
- [15] G. Weidenspointner, S. J. Sturmer, E. I. Novikova, M. J. Harris, A. Zoglauer, C. B. Wunderer, R. M. Kippen, P. Bloser, and Ch. Zeitnitz, "MGGPOD: A Monte Carlo Suite for Gamma Ray Astronomy-Version 1.1", ArXiv:astro-ph/0702623v1 February 2007
- [16] Ezio Caroli, Natalia Auricchio, Lorenzo Amati, Yuriy Bezsmolny, Carl Budtz-Jørgensen, Rui M. Curado da Silva, Filippo Frontera, Alessandro Pisa, Stefano Del Sordo, John B. Stephen, Giulio Ventura, "A focal plane detector design for a wideband Laue-lens telescope", accepted for publication in Experimental Astronomy, May 2006, this is not exactly identical to [4]
- [17] Jonas Tanhua and Paul Colin Gloster, "Report to Johan Kero for the Radiation Environment and Effects project in Space Environment Interaction: The Odin satellite", Coursework for RYMD06 Space Environment Interaction, 2004
- [18] Colin Paul Gloster, "Onboard software of the Mechanical and data Acquisition Support System spacecraft of the Young Engineers' Satellite 2", master's thesis, Umeå University, November 2005
- [19] European Space Agency, "INTEGRAL detects signature of critical cosmic accelerator", HTTP://sci.esa.int/science-e/www/object/index.cfm?fobjectid=43321, citing A. J. Dean, D. J. Clark, J. B. Stephen, V. A. McBride, L. Bassani, A. Bazzano, A. J. Bird, A. B. Hill, S. E. Shaw, P. Ubertini, "Polarized Gamma-Ray Emission from the Crab", Science, 29 August 2008, Vol. 321. no. 5893, pp. 1183 - 1185, DOI: 10.1126/science.1149056
- [20] Daniel Alex Finkelstein, "Spotlight: An Interview With 2006 Turing Award Winner Frances E. Allen", Crossroads, Winter 2007, WWW.ACM.org/crossroads/xrds14-2/franallen.html

Bolsas Anteriores

Ano de Conclusão:	Referência:	Doctoral Bursary of the Students Who Were Educated Abroad
Instituição:	Periodo:	1st January 2006 to 9th September 2007 (it could have lasted to 31st December 2008 had I not quit) (meses)
		University of Pisa (Università di Pisa also known as Università degli Studi di Pisa)

Actividade profissional

Deseja manter alguma actividade profissional durante o periodo da bolsa?

NÃO

Graus Académicos (Indicação dos certificados de disciplinas realizadas)

Grau académico (nr Anos):	Descrição:	The stream "Micro and nanoelectronic technologies, devices and systems" of "Engineering of the information". I was not permitted to pursue the research which I had actually applied for and for which I had been awarded a fellowship, so I quit: i.e. I did not graduate.
		Doutoramento (Doctorate / PhD) (anos)
Situação:	Data de conclusão:	09-09-2007
Classificação:	Certificado:	<u>Italian certificates of Mister Gloster.pdf</u>
		Concluído
		I quit.

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Suplemento:

Grau académico (nr Anos):	Mestrado (Master/MSc with thesis) (anos)	Descrição:	Science in Engineering with a major in Space Engineering
Situação:	Concluído	Data de conclusão:	16-06-2006
Classificação:	"Not applicable for Swedish degrees."	Certificado:	<u>secondary_degree_of_Mister_Gloster.pdf</u>

Suplemento:

Grau académico (nr Anos):	Licenciatura (BSc, Medical School, Law School) (anos)	Descrição:	Computer Applications (Computer Science). It is not a "BSc, 3 years". In the Republic of Ireland, the Bologna process was not followed so there a B.Sc. was 4 years long.
Situação:	Concluído	Data de conclusão:	05-11-2003
Classificação:	2nd Class Honours Grade 1	Certificado:	<u>primary_degree_of_Mister_Gloster.pdf</u>

Suplemento:

Dados para a Candidatura: SFRH/BD/46372/2008 (Bolsa de Doutoramento)

Nome do Investigador: Nicholas Collin Paul Gloucester

Domínio Científico: Física

Identificação do Investigador:

Nome Completo: Nicholas Collin Paul Gloucester

Número de Identificação Fiscal (NIF): 263 553 400

Data de nascimento: 03-07-1980

Naturalidade (concelho): Outros

Sexo:

Documento de Identificação:

Data Emissão:

Arquivo:

M
120

País Nacionalidade: Ireland

Morada: Vivenda Rosa, nº 67 Dtº, Morata - Montes de Baixo,

Código-postal: 3140

Localidade:

Pereira MMV

País Residência: Portugal

Telefone (casa): None.

Telefone (emprego): 239 410 663

Telemóvel: None.

E-mail Contacto:

Colin_Paul_Gloster@ACM.org

Habilitações Académicas do Investigador

Ano	Grau	Domínio científico	Designação do Curso	N.Anos
2007	DOUTORAMENTO	The stream "Micro and nanoelectronic technologies, devices and systems" of "Engineering of the information".	Doctorate in Information Engineering of the University of Pisa	0

Título da Tese (se aplicável):

I was not permitted to pursue the research which I had actually applied for and for which I had been awarded a fellowship, so I quit: i.e. I did not graduate.

Instituição (Atrib. Grau): .

Classificação: I quit: i.e. I did not graduate.

Ano	Grau	Domínio científico	Designação do Curso	N.Anos
2006	MESTRADO	Science in Engineering with a major in Space Engineering	Degree of Master of Science in Engineering with a major in Space Engineering	1

Título da Tese (se aplicável):

Onboard software of the Mechanical and data Acquisition Support System spacecraft of the Young Engineers' Satellite 2

Instituição (Atrib. Grau): .

Classificação: "Not applicable for Swedish degrees."

Ano	Grau	Domínio científico	Designação do Curso	N.Anos
2003	LICENCIATURA	Computer Science	B.Sc. in Computer Applications (Computer Science)	4

Título da Tese (se aplicável):

On-board data processing for a principal investigator

Instituição (Atrib. Grau): .

Classificação: 2ND CLASS HONOURS GRADE 1

Actividades anteriores e situação actual em termos científicos e/ou profissionais:

Período	Cargo ou Categoria	Instituição
1st March 2005 - 31st August 2005	Intern. I had developed some of the software which had been planned to be on board the Young Engineers' Satellite 2. See WWW.YES2.info and HTTP://StreamISS.SpaceFlight.ESA.int/?pg=production&dm=1&PID=yes2 .	The European Space Technology and research Centre (ESTEC (ESTEC is not an acronym)) of the European Space Agency, Keplerlaan 1, Postbus 299, 2200 AG Noordwijk ZH, The Netherlands.
4th February 2005 - 28th February 2005	Volunteer. I had developed some of the software which had been planned to be on board the Young Engineers' Satellite 2. See WWW.YES2.info and HTTP://StreamISS.SpaceFlight.ESA.int/?pg=production&dm=1&PID=yes2 .	Delta-Utec Space Research & Consultancy, Middelstegegracht 89g, 2312 TT Leiden, The Netherlands.

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28th May 2001 - 28th September 2001	Student trainee. It was my job to come up with suggestions for improving the processes of modifying software onboard satellites to the OnBoard Data Handling systems; and increasing the ability to understand what the software is doing.	European Space Operations Centre of the European Space Agency, Robert-Bosch-Strasse 5, 64293 Darmstadt, Germany.
12th June 2000 - 29th September 2000	Intern. I was using C and OPNET 6.0.L to develop simulation models of Internet delivery over satellite, via piggybacking on DVB (Digital Video Broadcasting).	Satellite Systems, British Telecom, Adastral Park, Martlesham Heath, Ipswich IP5 3RE, Suffolk, England.
9th - 15th June 1998	Assistant in State pre-university examinations.	Pobalscoil Rosmini, Gracepark Road, Drumcondra, Dublin 9, Republic of Ireland.
Both semesters of the academic year 2000-2001.	Tutoring first year students in simple Java and x86 machine code and assembly language programming.	School of Computer Applications (that school has since been replaced by the School of Computing), Dublin City University, Dublin 9, Republic of Ireland.
4 days in September 1995.	Worked in a local bookshop while a local school reopened (my nonlocal school reopened later).	The bookshop had been independent and called Fax & Fiction and has since joined a franchise so has been replaced by Eason, Unit 2E Killlegland Court, New Ashbourne Town Centre, Ashbourne, Co. Meath, Republic of Ireland.
3rd - 14th March 1997	Work experience student with Amnesty International.	The Irish Section of Amnesty International, which has moved to Amnesty International Irish Section, First Floor, Ballast House, 18-21 Westmoreland Street, Dublin 2, Republic of Ireland.
20th - 25th July 1998	Work experience student. Computer modeling and analysis (using the software package Satellite Toolkit and the book Maral and Bousquet, "Satellite Communications Systems") of the satellite constellations of two (then) forthcoming mobile phone services.	Satellite Planning division, British Telecom, Angel Centre, 403 St. John Street, London EC1V 4PL, England.
23rd October 1999 - 19th December 1999	Weekend contractor at a 3Com Technologies factory. Factory assembly line producing networking cards.	I worked at a 3Com factory but I was actually employed by the Richmond Recruitment agency. The agency is currently located at Richmond Recruitment, 83 Merrion Square, Dublin 2, Republic of Ireland.
5th July 1999 - 27th August 1999	Student in the Satellite Operations Planning & Investments division and the Satellite Planning division of British Telecom. I created two internal intranet websites that described these two satellite divisions' operations and functions within BT.	British Telecom, Angel Centre, 403 St. John Street, London EC1V 4PL, England.
1st January 2006 - 9th September 2007	PhD student. I had applied to Pisa to for space research. I was warned that the first year would not focus on space but it was possible a space project would start later. Sadly this has not happened so I have quit to earn a PhD in space elsewhere.	Information Engineering Department: Electronics, Computer Engineering, Telecommunications, University of Pisa, Via G. Caruso 16, 56122 Pisa, Italy.
Summer 2008. Freelance.	Subcontractor to the company Zelinda which "specializes in the design of communications equipment for the space industry". I was based offsite via the Internet.	I have never visited the premises of the client. The client is based at Zelinda Ireland Ltd., Daisybank House, Powers Hill, Cheekpoint, Co. Waterford, Republic of Ireland.
June 2008 to the present.	Investigador bolsheiro no âmbito do projecto PTDC/CTE-SPA/65803/2006, no Centro de Instrumento do Departamento de Física da Universidade de Coimbra.	Grupo de Instrumentação Atómica e Nuclear, Departamento de Física, Universidade de Coimbra, Rua Larga, 3004-516 Coimbra, Portugal.

Área de actividade científica

I used to be involved with research for on-chip networking in the largest University of Pisa in Italy. I had applied to the largest University of Pisa in 2005 in order to conduct research relevant to space, and I was accepted by a researcher who had had several years' experience specific to space. He had warned me before I began that the first year (i.e. 2006) would not be so specific to space but that it was quite possible that I would be permitted to conduct research specific to space after the first year if a project became available. Unfortunately this has not happened and I have quit that position to try to become a Ph.D. student concentrating on space at another university.

I was accepted in the original University of Coimbra for a project in gamma-ray astronomy so I moved from Italy to Portugal. I apply to FCT for funding for the tuition fees such that I may officially enrol as a Ph.D. student in Coimbra.

Several open issues in gamma-ray astronomy are still poorly known and understood, such as non-thermal mechanisms in supernova remnants, the high energy active galactic nuclei spectra cut-off, the detection of nuclear and annihilation lines and the gamma-ray polarization levels of emission sources including: pulsars, gamma-ray bursts, solar flares, and black holes. In order to explore these astronomical issues the GRI (Gamma-Ray Imager) consortium proposes a new space telescope mission for the ESA (European Space Agency) Cosmic Vision 2015-2025 program - missions to be launched between 2015 and 2025 (fig. 1). ESA recognizes the importance of this mission (

[HTTP://sci.esa.int/science-e/www/object/index.cfm?fobjectid=36959](http://sci.esa.int/science-e/www/object/index.cfm?fobjectid=36959)

) due to its novel gamma-ray focusing concept based on Laue lens technology, since this would be the first space-based mission that will allow gamma-ray focusing in a broad energy band-pass (60-1000 keV). So far this energy range has been observed exclusively by using traditional collimated and/or coded mask instrumentation, which limits the telescope sensitivity. For instance, the IBIS telescope on board the ongoing ESA gamma-ray mission, INTEGRAL (INTErnational Gamma-Ray Astrophysics Laboratory), is equipped with a coded mask. Although INTEGRAL has offered the best gamma-ray Universe observations so far, the GRI Laue lens focusing optics are potentially capable of improving detection sensitivity by a factor of 10 to 100.

The CI (Centro de Instrumentação), where this activity will be conducted, is a GRI consortium member. Its main contribution to the mission is to develop the Laue lens focal plane instrument based on a CdTe stack detector (fig. 2). The performances of this instrument must meet the requirements established by the consortium: gamma-ray detection sensibility of 10 to the power of -7 photons/(cm squared second keV), energy resolution of approximately 3%, and minimum detectable polarization lower than 5% for a 10 mCrab gamma-ray source equivalent, for 10 to the power of -6 second observation times. The expected instrument mass model simulation results should fit these requirements. Furthermore, the instrument material and design must meet the exigent technical requirements of a space-based mission (vibrations, extreme temperatures, limited power consumption, etc.).

This activity consists of the optimization of the CdTe focal plane instrument in the framework of the Gamma-Ray Imager consortium by writing Monte Carlo simulation software capable of reproducing a response which approaches reality in the space environment. So far, previous theoretical studies were performed by means of Monte Carlo simulations based on the Geant4 toolkit from CERN concerning the potential performances of CdTe instruments for different design configurations and dimensions, for different types of gamma-ray emissions (monochromatic beams, the Crab Nebula, gamma-ray bursts, etc.) and for different levels of photon beam polarization [11,13,14].

An important feature of GRI is sensitivity to polarization which is not properly detectable by currently deployed instruments. Its importance was confirmed in papers such as [15] and in August 2008 in the journal "Science", which caught the attention of ESA [19].

The applicant examined all of the examples for novices supplied with a version of Geant4 released in 2007, and examined over 150 of the internal files of the Geant4 library itself. The conclusion is that how Geant4 is implemented is not good with respect to the elite of software engineering. The criticisms do not pertain to the quality of the simulations nor bugs nor slowness but instead concern maintainability. A selection of the observed problems can be categorized as relating to:

using the C++ preprocessor,

pointers [20],

conditional statements instead of dispatching,

copying and pasting instead of arrays,

postincrementing instead of preincrementing,

independence where dependence is intrinsic,

alternative names for the same action,

redundant replications of defaults,

a hard-coded constant magic number,

or

unused parameters. Claims such as

"Geant4 adopts object-oriented technology"

in [10, Page 270] are exaggerations.

The aforementioned earlier simulation studies were partially experimentally verified through a set of CdTe matrix prototype experiments performed at the ERSF (European Radiation Synchrotron Facility), Grenoble, France, where these devices were tested under approximately 100% polarized monochromatic beams in the energy range 100-750 keV [12]. However, new and essential functionalities must still be implemented in the instrument simulation mass model such as: interfacing with Laue lens simulation data, prompt background noise caused by galactic cosmic ray proton interactions in the instrument, delayed background noise caused by material activation, diffuse cosmic X-ray background noise, and a Compton event reconstruction package. Through a collaborative work with the University of Ferrara, Italy, which has been developing the most recent Laue lens technology, the response of the Laue lens system to typical gamma-ray sources' emissions and the respective point spread function in the instrument detection plane as a function of the photons' energy will be implemented in the simulation model. Compton event reconstruction is an important tool to select between incoming events from a gamma-ray astronomical source and the background noise.

The inclusion of background noise in the simulation software is fundamental to approach the mass model simulation results to those that are expected to be obtained in a real space mission, because the overall background noise flux is in general much higher than the detected source emission flux. A planned sensitivity analysis of background noise levels in different orbits' radiation environments was mentioned in [16, Section 4 Conclusion]. The applicant used the SPace ENVIRONMENT Information System (SPENVIS) suite of radiation modeling software of ESA developed by the Belgian Institute for Space Aeronomy for his secondary degree [17,18].

In order to simulate accurately the nuclear processes involving proton interactions and material activation, it will be necessary to verify experimentally several Geant4 hadronic cross sections. The collaboration that has been established between the Centro de Instrumentação and the Center for Space Radiations based in the Cyclotron Research Centre facilities in Louvain-la-Neuve, Belgium, will permit access to its facilities in order to perform some necessary experiments for the hadronic cross section validation.

This simulation software will be constantly upgraded in order to fit the mission conditions as closely as possible, when new concepts and

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new ideas will be incorporated in the instrument project by the theoretical and experimental members of the GRI consortium.

Área de actividade científica (Domínio de especialização, investigação e outras competências/actividades)

Domínio de especialização

I have and do still specialize in information technology (computer science and electronic engineering) for space. I have used the formal specification languages PVS, Z, and VDM. PVS is the best of these three by far. My preferred hardware description language is VHDL. I have used the imperative programming language Ada. I had been originally inspired to learn Ada because of its importance in the field of astronautics. I have also used many other imperative languages. I have also used a logic language and a number of functional languages but I would not say that I have specialized in them. I used to be involved in research for on-chip networking, but this plays no role in my current research.

Actualis interesses de investigação

I am interested in effects of the space environment on artificial satellites and space probes. Particular emphasis had been placed on the effects of particles on computer memories and computer registers, but now my current research effort is concentrated on a different aspect of these nuisances: i.e. the noise in sensor readings caused by unwanted particles. My interest in nuisance particles is part of a broader interest in space weather. My interest in space weather is part of a broader interest in space and particles. Instead of currently being involved with development of intellectual property embedded in a spacecraft near the end of its development, I am currently involved in the early design stage of a mission by being responsible for simulating and optimizing many crucial aspects of an instrument for a gamma-ray telescope which is proposed to be launched.

Outras competências/actividades

I had joined the European Students' Earth Orbiter project of the Student Space Exploration & Technology Initiative in 2001. After my primary degree I joined the Narrow Angle Camera payload team but during my primary degree I had been in the On-Board Data Handling platform team. I am a member of Ada Deutschland, Ada-Europe, the Association for Computing Machinery (ACM) and its Special Interest Group on the Ada programming language. I am a member of the Association of C & C++ Users. I post to Usenet. I attended: Astronomy and Astrophysics in Ireland (2004), DASIA (DAta Systems In Aerospace) 2003, 3rd European Quantum Information Processing & Communication Workshop(2002), DASIA2002, BABEL '01 Workshop on Multi-Language Infrastructure and Interoperability, Huygens Probe On-Board Software 4th Training Workshop, Quantum Computers and Quantum Chaos(2001), International Conference for Physics Students 2000, and International Conference on Software Engineering 2000.

Experiência na orientação

I have no experience as a scientific adviser. I have tutored first year undergraduate students on how to program.

Participação em Projectos

I am currently involved in an international project for the Gamma-Ray Imager (GRI). I am funded by a Portuguese fellowship (i.e. PTDC/CTE-SPA/65803/2006 - "CdTe Focal Plane for a Laue Lens Gamma-ray Space Telescope").

I used to be involved in an international project of the European Commission called SHAPES (Scalable software Hardware Architecture Platform for Embedded Systems).

Prémios e distinções

Ano	Nome do prémio ou distinção	Nome da entidade promotora
2006	Doctoral Bursary of the Students Who Were Educated Abroad.	University of Pisa (Università di Pisa also known as Università degli Studi di Pisa). 1st January 2006 to 9th September 2007 (it could have lasted to 31st December 2008 had I not quit).

Publicações

Thesis

"Onboard software of the Mechanical and data Acquisition Support System spacecraft of the Young Engineers' Satellite 2", master's thesis, Umeå University, November 2005

Other publications

Book review of "The Design and Evolution of C++" by Bjarne Stroustrup published by the Association of C & C++ Users in the February 2008 issue of its "CVu" journal. A gratis online version is available at

[HTTP://accu.org/index.php/book_reviews?url=view.xqy?review=14179489152797087495](http://accu.org/index.php/book_reviews?url=view.xqy?review=14179489152797087495)

and is hyperlinked to by the creator of the C++ programming language on

[WWW.research.ATT.com/~bs/dne.html](http://www.research.att.com/~bs/dne.html)

Book review of Norman Fenton and Gillian Hill, "Systems Construction and Analysis: A Mathematical and Logical Framework" published by the Association of C & C++ Users in the August 2008 issue of "C Vu" (available to subscribers on

[HTTP://accu.org/var/uploads/journals/cvu204.pdf](http://accu.org/var/uploads/journals/cvu204.pdf)

rod.

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Book review of Kropf (editor), "Formal Hardware Verification: Methods and Systems in Comparison" published by the Association of C & C++ Users in the August 2007 issue of its "C Vu" journal. A gratis version is available at

[HTTP://ACCU.org/index.php/book_reviews?url=view.xqy?review=2055947897054678942](http://accu.org/index.php/book_reviews?url=view.xqy?review=2055947897054678942)

Book review of Ben Cohen, "VHDL Answers to Frequently Asked Questions", second edition published by the Association of C & C++ Users in the April 2004 issue of its journal "C Vu". A gratis version is available at

[HTTP://ACCU.org/index.php/book_reviews?url=view.xqy?review=v003592](http://accu.org/index.php/book_reviews?url=view.xqy?review=v003592)

Book review of Grady Booch, "Software Engineering with Ada", second edition published by the Association of C & C++ Users in the April 2004 issue of its "C Vu" journal. A gratis version is available at

[HTTP://ACCU.org/index.php/book_reviews?url=view.xqy?review=s003588](http://accu.org/index.php/book_reviews?url=view.xqy?review=s003588)

Book review of Petru Eles & Krzysztof Kuchcinski & Zebo Peng, "System Synthesis with VHDL" published by the Association of C & C++ Users in the April 2004 issue of its "C Vu" journal. A gratis version is available at

[HTTP://ACCU.org/index.php/book_reviews?url=view.xqy?review=s003591](http://accu.org/index.php/book_reviews?url=view.xqy?review=s003591)

Book review of Zainalabedin Navabi, "VHDL: Analysis and Modeling of Digital Systems" published by the Association of C & C++ Users in the April 2004 issue of its "CVu" journal. A gratis version is available at

[HTTP://ACCU.org/index.php/book_reviews?url=view.xqy?review=v003593](http://accu.org/index.php/book_reviews?url=view.xqy?review=v003593)

Book review of Stephen John Young, "An introduction to Ada", second edition published by the Association of C & C++ Users in the August 2002 issue of its "C Vu" journal. A gratis version is available at

[HTTP://ACCU.org/index.php/book_reviews?url=view.xqy?review=a003247](http://accu.org/index.php/book_reviews?url=view.xqy?review=a003247)

Review of the tutorial Geoff Gilpin and R.R. Software staff, "Ada-Vid (Introduction to JANUS/Ada) including Janus/Ada Extended" published by the Association of C & C++ Users in the April 2002 issue of its "CVu" journal. A gratis version is available at

[HTTP://ACCU.org/index.php/book_reviews?url=view.xqy?review=a003140](http://accu.org/index.php/book_reviews?url=view.xqy?review=a003140)

Book review of both

Michael J. Stratford-Collins, "Ada: A Programmer's Conversion Course"

and

Henry Ledgard, "Ada: An Introduction", second edition

published by the Association of C & C++ Users in the April 2002 issue of its "CVu" journal. A gratis version is available at

[HTTP://ACCU.org/index.php/book_reviews?url=view.xqy?review=a003782](http://accu.org/index.php/book_reviews?url=view.xqy?review=a003782)

Review of three books, viz.

Colin P. Williams & Scott H. Clearwater, "Ultimate Zero and One: Computing at the Quantum Frontier"

and

Michael Brooks (editor), "Quantum Computing and Communications"

and

Arthur O. Pittenger, "An Introduction to Quantum Computing Algorithms"

published by the Association of C & C++ Users in the August 2001 issue of its journal "C Vu". A gratis version is available at

[HTTP://accu.org/index.php/book_reviews?url=view.xqy?review=u002393](http://accu.org/index.php/book_reviews?url=view.xqy?review=u002393)

Book review of Mark Nelson & Jean-Loup Gailly, "The Data Compression Book", second edition in the April 2005 issue of its "CVu" journal. This is available to subscribers at

[HTTP://accu.org/var/uploads/journals/cvu17-2-FINAL.pdf](http://accu.org/var/uploads/journals/cvu17-2-FINAL.pdf)

Book review of Robert Sedgewick and Christopher J Van Wyk, "Algorithms in C++", Parts 1-4, third edition published by the Association of C & C++ Users in the February 2008 issue of its "C Vu" journal. A gratis version is available at

[HTTP://accu.org/index.php/book_reviews?url=view.xqy?review=10867546023303641450](http://accu.org/index.php/book_reviews?url=view.xqy?review=10867546023303641450)

Book review of James J McGregor & Alan H Watt, "Pascal for Science and Engineering". A gratis version is available at

[HTTP://accu.org/index.php/book_reviews?url=view.xqy?review=11805068281861580112](http://accu.org/index.php/book_reviews?url=view.xqy?review=11805068281861580112)

Book review of He Jifeng; C. A. R. Hoare; and Jonathan Bowen, "Provably Correct Systems: Modelling of Communication Languages and Design of Optimized Compilers" published by the Association of C & C++ Users in the June 2008 issue of its journal "CVu" available to subscribers at

[HTTP://accu.org/var/uploads/journals/cvu203.pdf](http://accu.org/var/uploads/journals/cvu203.pdf)

Book review of James Bao-Yen Tsui, "Fundamentals of Global Positioning System Receivers: A Software Approach" published by the Association of C & C++ Users in the April 2008 issue of its journal "CVu" available to subscribers at

[HTTP://accu.org/var/uploads/journals/cvu202.pdf](http://accu.org/var/uploads/journals/cvu202.pdf)

Various Usenet posts and/or emails of mine have been partially reproduced in the following issues of "Ada User Journal": March 2002; September 2002; December 2002; September 2003; December 2003; and September 2006.

Letter in "The Irish Times" newspaper, July 1st, 1998 edition,

[WWW.IrishTimes.com/newspaper/letters/1998/0701/98070100113.html](http://www.IrishTimes.com/newspaper/letters/1998/0701/98070100113.html)

, on that webpage it is incorrectly indicated "07 Jul 1998", the title in the hardcopy was "SOLAR POWER SATELLITES" but that title was replaced by "Solar Energy" on the website.

Comunicações

n/a

Línguas

Language

	Reading	Writing	Conversation
Other	Good	Good	Good
Dutch	Excellent	Good	Basic
English	Excellent	Excellent	Excellent
German	Excellent	Excellent	Excellent

Italian

Basic

Basic

Basic

Swedish

Excellent

Excellent

Good

FCT - Avaliação de Candidaturas Concurso para a atribuição de Bolsas Individuais 2008 | Print: 22-06-2011 12:45:43

Dados para a Candidatura: SFRH/BD/46372/2008 (Bolsa de Doutoramento)

Nome do Investigador: Nicholas Collin Paul Gloucester

Domínio Científico: Física

Curriculum vitae do Orientador: Maria Filomena de Osorio Pinto dos Santos

Identificação do Investigador:

Nome Completo: Maria Filomena de Osório Pinto dos Santos
Número de Identificação Fiscal (NIF): 152587390
Data de nascimento: 05-12-1959 **Naturalidade (concelho):** Coimbra
Sexo: F **Documento de Identificação:** 4236577 **Data Emissão:** - **Arquivo:**
País Nacionalidade: Portugal
Morada: n/a
Código-postal: n/a **Localidade:** n/a
País Residência: n/a
Telefone (casa): 239410665 **Telefone (emprego):** 239410665 **Telemóvel:** - **E-mail Contacto:** Filomena@gian.fis.uc.pt

Habilitações Académicas do Investigador

Ano	Grau	Domínio científico	Designação do Curso	N.Anos
2005	AGREGAÇÃO	Física		
Título da Tese (se aplicável):				
Instituição (Atrib. Grau):		Faculdade de Ciências e Tecnologia . Universidade de Coimbra		
Classificação:		Maioria		

Ano	Grau	Domínio científico	Designação do Curso	N.Anos
1995	DOUTORAMENTO			
Título da Tese (se aplicável):				
Instituição (Atrib. Grau):		Faculdade de Ciências e Tecnologia . Universidade de Coimbra		
Classificação:		Distinção e Louvor		

Actividades anteriores e situação actual em termos científicos e/ou profissionais:

Período	Cargo ou Categoria	Instituição
1985-1995	assistente	Faculdade de Ciências e Tecnologia- Universidade de Coimbra
1995-2000	Prof. Auxiliar	Faculdade de Ciências e Tecnologia- Universidade de Coimbra
2000-	Prof. Auxiliar (nomeação definitiva)	Faculdade de Ciências e Tecnologia- Universidade de Coimbra

Área de actividade científica

O interesse científico tem-se desenvolvido na área de Física Aplicada. Concretamente tem sido estudados os processos físicos envolvidos na detecção de raios x de baixa energia em meios gasosos. O trabalho tem sido desenvolvido sobretudo através de simulação pelo método de Monte Carlo, embora possuindo uma pequena componente experimental e visa quer a investigação de características fundamentais da interacção de fotões e electrões em meios gasosos - gases raros e suas misturas, quer da aplicação ao estudo e optimização de detectores do tipo Contador Gasoso de Cintilação Proporcional e Contador Proporcional. Outra área abordada é a simulação da emissão de fotocátodos em atmosfera de gás raro e suas misturas na presença de um campo eléctrico, em função da energia dos fotões incidentes.

Área de actividade científica (Domínio de especialização, investigação e outras competências/actividades)

Domínio de especialização
 Instrumentação Atómica e Nuclear. Transporte de radiação em gases.
Actuais interesses de investigação

Estudo dos fenómenos relacionados com o transporte de radiação em meios gasosos tendo em vista a optimização de detectores gasosos do tipo contador proporcional e contador gasoso de cintilação proporcional.
 Aplicação do método de Monte Carlo ao transporte de radiação em meios gasosos.
 Estudos experimentais baseados em detectores gasosos.
 Misturas de gases nobre como meio de detecção de radiação.
 Detectores com multiplicação - técnicas para melhorar a resolução em energia.
 Microestruturas - desenvolvimento, simulação e estudo experimental de microestruturas. Performance de microestruturas em misturas gasosas. Interpretação dos fenómenos envolvidos.

Outras competências/actividades

Física Atómica e Molecular.

Experiência na orientação

Seminário de licenciatura
 97-98 Francisco Lemos

Tese de Doutoramento

Co-orientação do trabalho conducente à tese intitulada

"Estudo Detectores de radiação X de baixa energia baseados em misturas de Xenon e Neon?",

apresentada pela lic. e mestre Filipa Isabel Gouveia de Melo Borges Belo Soares na Universidade de Coimbra em Dezembro de 2003

Orientação de Projecto de licenciatura em Eng^a Física

Fernando Amaro 2003-2004

Orientação de Projecto de licenciatura em Eng^a Física

Liliana P.M.M. Carita 2005-2006

Participação em Projectos

Coordenação de Projectos Científicos.

"Técnicas para melhorar a resolução em energia em detectores gasosos de radiação com ionização"
 Projecto POCI/FP/63409/2005. Projecto em curso cujo início foi em 10/2005

"Estudo de misturas de gases nobres para contadores proporcionais"
 Projecto CERN/FAT/43783/2001 projecto de 2 anos, em que o financiamento do 2º ano foi condicionado à aprovação de um relatório de progresso. Este projecto, que entretanto passou a ter a designação de POCI/FAT/43783/2002, terminou em Dezembro de 2004.

"Técnicas para melhorar a resolução em energia em detectores gasosos de radiação com ionização"
 POCI/FP/63409/2005

"Técnicas para melhorar a resolução em energia em detectores gasosos de radiação com ionização II"
 POCI/FP/63934/2005

"Detectores gasosos com multiplicação"
 PTDC/FIS/64687/2006

Participação em Projectos Científicos.

- Projecto CERN/S/NC/141/94 "Espectrometria de raios X em processos solares de alta energia"
- Projecto PEDIC/S/SIS/1853/94 "Microfitas"
- Projecto Praxis/3/31/CTAE/1920/95 "Detectores e processos físicos na análise de asteróides".
- Projecto CERN/C/FIS/1085/96 "Espectrometria de raios X em processos solares de alta energia"
- Projecto CERN/P/FAE/1163/97 "Processos físicos em detectores de microfitas"
- Projecto CERN/P/FIS/1166/97 "Processos físicos na interacção de raios delta em detectores gasosos: simulação e desenvolvimento experimental."
- Projecto CERN/P/FIS/1200/98 "Processos físicos em detectores de microfitas II"
- Projecto PRAXIS/P/FIS/13140/1998 "Detectores de raios X para espectroscopia de hidrogénio muónico sob a influência de campos magnéticos intensos"
- Projecto CERN/P/FIS/15193/1999 "Processos físicos na interacção de raios delta em detectores gasosos: simulação e desenvolvimento experimental II."
- Projecto CERN/P/FIS/15201/1999 "Processos Físicos em detectores de microfitas III".
- Projecto POCI/FP/63429/2005 "Desenvolvimento de novos fotosensores gasosos baseados em microestruturas"
- Projecto POCI/FP/63430/2005 "Iões positivos e processos físicos em detectores gasosos - II"
- Projecto POCI/FP/63898/2005 "Iões Positivos e Processos Físicos em Detectores Gasosos - III"
- Projecto POCI/FP/81918/2007 "Desenvolvimento de técnicas para detectores de radiação X de baixa energia"
- Projecto POCI/FP/81929/2007 "Absorção de Raios-X polarizados em Gases nobres"

15x

- Projecto PTDC/CTE-SPA/65803/2006 "Plano focal de CdTe para telescópio espacial de raios gama equipado de lentes de Laue"

Prémios e distinções

Ano	Nome do prémio ou distinção	Nome da entidade promotora
n/a		

Publicações

Thesis

Tese de Doutoramento, Coimbra 1995

Papers in international scientific periodicals with referees

- "Monte Carlo simulation study of the characteristics of Xe-Ne gas mixtures as detection media in gas proportional ionization counters"
F. P. Santos, P. J. B. M. Rachinhas, T. H. V. T. Dias, F. I. G. M. Borges, A. D. Stauffer and C. A. N. Conde
IEEE Trans.Nucl.Sci.54(2007)219

- "Experimental Study of Xe-Ne Proportional Counters for X-Ray Detection"
F. I. G. M. Borges, F. P. Santos, F. Amaro, T. H. V. T. Dias, and C. A. N. Conde
IEEE Trans.Nucl.Sci.54(2007)224

- "The Gridded-Microstrip Gas Chamber as a High Energy Resolution Gaseous X-ray Detector"
L.P.M.M.Carita, S.J.C.do Carmo, F.P.Santos, C.A.N.Conde
IEEE Trans.Nucl.Sci.54(2007)1

- "Quenched and non-quenched Ar-Xe Penning mixtures as detection media for a Gridded-Microstrip Gas Chamber X ray detector"
Liliana P.M.M. Carita, Carlos A.N. Conde and Filomena P. Santos
submitted to IEEE Trans.Nucl.Sci. 2008

- "A New Non-Clipped Correlator Based on Digital Signal Processor for Photon Count Spectroscopy"
Carlos Correia, Filomena P. Santos
Rev. Sci. Instrum. 60(1989)2937-39

- "The Primary Electron Cloud in Xenon for X-rays in the 0.1 to 10 keV range"
T.H.V.T.Dias, F.P.Santos, C.A.N.Conde
Nucl. Inst. & Meth. A310(1991)137-9

- "The Fano Factor in gaseous xenon: a Monte Carlo calculation for X-rays in the 0.1 to 25 keV range"
T.H.V.T.Dias, F.P.Santos, A.D.Stauffer, C.A.N.Conde
Nucl. Inst. & Meth. A307(1991)341-6

- "Variation of energy linearity and w value in gaseous xenon radiation detectors for X-rays in the 0.1 to 25 keV energy range: a Monte Carlo simulation study"
F.P.Santos, T.H.V.T.Dias, A.D.Stauffer, C.A.N.Conde
Nucl. Inst. & Meth. A307(1991)347-52

- "Distortion Effects in Soft X-Ray Energy Spectra in Xenon Gaseous Detectors: a Monte Carlo Simulation Study".
T.H.V.T. Dias, F.P. Santos, A.D. Stauffer and C.A.N. Conde
Phys. Rev. A 46(1992)237-45.

- "Tridimensional Monte Carlo Calculation of the VUV Electroluminescence and Other Electron Transport Parameters in Xenon".
F.P. Santos, T.H.V.T.Dias, A.D.Stauffer and C.A.N. Conde
J.Phys.D: Applied Physics 27(1994) 42-48.

- "A Monte Carlo Simulation of X-ray Absorption and Electron Drift in Gaseous Xenon".
T.H.V.T.Dias, F.P. Santos, A.D.Stauffer and C.A.N. Conde
Phys.Rev.A 48(1993)2887-2902.

- "A Monte Carlo Simulation of Xenon Filled Cylindrical Proportional Counters"
P.M.Rachinhas, T.H.V.T.Dias, F.P. Santos, A.D. Stauffer and C.A.N. Conde
IEEE Trans. Nucl. Sci. NS-41(1994)984-988

- "Pulse Height Spectrum Distortion in Gaseous Xenon Detectors for Soft X-rays: Experimental Results"
F.P.Santos, J.M.F.dos Santos, T.H.V.T.Dias, C.A.N.Conde
IEEE Trans. Nucl. Sci. NS-42(1995)611-614

- "The Response of Xenon X-Ray Detectors to Full-Energy Absorption and Fluorescence-Escape Events: Measurement and Modelling".
T.H.V.T.Dias, F.P.Santos, J.M.F. dos Santos, J.A.M.Lopes, J.F.C.A.Veloso, P.J.B.M.Rachinhas, R.E.Morgado, A.D.Stauffer and C.A.N.Conde.
IEEE Trans. Nucl. Sci. NS-43(1996)1432-1441

- "Energy Resolution of Xenon Proportional Counters: Monte Carlo Simulation and Experimental Results".
P.J.B.M.Rachinhas, T.H.V.T.Dias, A.D.Stauffer, F.P.Santos, and C.A.N.Conde.
IEEE Trans. Nucl. Sci. NS-43 (1996)2399-2405
- "Full-Energy Absorption of x-ray energies near the Xe L- and K- photoionization thresholds in xenon gas detectors: simulation and experimental results"
T.H.V.T.Dias, J.M.F.dos Santos, P.J.B.M.Rachinhas, F.P.Santos, C.A.N.Conde and A.D.Stauffer
J.Appl. Phys. 82 (1997) 2742-53
- "The Electroluminescence of Xe-Ne Gas Mixtures: A Monte Carlo Simulation Study"
F.P.Santos, T.H.V.T.Dias, P.J.B.M.Rachinhas, A.D.Stauffer, C.A.N.Conde
IEEE Trans. Nucl. Sci. NS-45(1998)176,185
- "The Xenon-Neon Gas Proportional Scintillation Counters: Experimental and Simulation Results"
T.H.V.T.Dias, F.P.Santos, P.J.B.M.Rachinhas, F.I.G.M.Borges, J.M.F.Santos, C.A.N.Conde
J. Appl.Phys. 85(1999)1,10
- "Absorption of Electrons in Xenon for Energies up to 200 keV: a Monte Carlo Simulation Study."
P.J.B.M. Rachinhas, T.H.V.T. Dias, F.P. Santos, C.A.N. Conde, and A.D. Stauffer.
IEEE Trans. Nucl. Sci. vol. 46, p. 1898-1900, 1999.
- "Operation of gas proportional scintillation counters in a low charge multiplication regime"
F.I.G.M.Borges, J.M.F.dos Santos, T.H.V.T.Dias, F.P.Santos, P.J.B.M.Rachinhas, C.A.N.Conde
Nucl. Inst. & Meth. A 422 (1999) 311-325
- "Simulation of X-ray tubes for imaging applications"
L.M.N.Távora, E.J.Morton, F.P.Santos, and T.H.V.T.Dias
Trans. Nucl. Sci. 47 (4) Part 1 1493-1498
- "Monte Carlo Simulation Study of the Fano Factor, w-value and Energy Resolution for the Absorption of Soft X Rays in Xenon-Neon Gas Mixtures."
F.P. Santos, T.H.V.T. Dias, P.J.B.M. Rachinhas, C.A.N. Conde, and A.D. Stauffer.
J. Appl. Phys. 89(2001) 8202-8213.
- "The Development of Portable Gas Proportional Scintillation Counters for X-Ray Spectrometry".
J.M.F dos Santos, J.A.M. Lopes, J.F.C.A. Veloso, P.C.P.S. Simões, T.H.V.T. Dias, F.P. Santos, P.J.B.M. Rachinhas, L.F. Requicha-Ferreira, and C.A.N. Conde.
X-Ray Spectrom.30(2001)373-381.
- "Xenon-Neon Gas Proportional-Scintillation Counters for X Rays Below 2 keV: a Monte Carlo simulation study."
F.I.G.M.Borges, F.P.Santos, T.H.V.T.Dias, P.J.B.M.Rachinhas, C.A.N.Conde, and A.D.Stauffer.
Trans. Nucl. Sci. 49(2002)917-922
- "A simulation study of the electroluminescence yield of xenon and xenon-neon mixtures contaminated by water vapor."
*F.P.Santos, T.H.V.T.Dias, L.M.N.Távora, P.J.B.M.Rachinhas, C.A.N.Conde, A.D. Stauffer
Nucl. Inst. & Meth. A 505(2003)211-214
- "An experimental investigation of the M-discontinuities in the response of xenon gas detectors to x-rays in the 0.1 to 2 keV range"
F. I. G. M. Borges, T. H. V. T. Dias, F. P. Santos, P. J. B. M. Rachinhas, J. M. F. dos Santos and C. A. N. Conde
Nucl. Inst. & Meth. A 505(2003)242-246
- "The performance of a gas proportional-scintillation counter for x-ray spectrometry in the 0.1-3 keV range"
F.I.G.M.Borges, J.M.F.dos Santos, T.H.V.T.Dias, F.P.Santos, C.A.N.Conde
X-Ray Spectrom.33(2004)124-127
- "Xenon-Neon gas proportional-scintillation counters for x-rays below 2 keV: experimental results."
F.I.G.M.Borges, F.P.Santos, J.M.F.dos Santos, T.H.V.T.Dias, P.J.B.M.Rachinhas, C.A.N.Conde
IEEE Trans.Nucl.Sci., 50(2003)842-846
- "A Monte Carlo study of backscattering effects in the photoelectron emission from a CsI photocathode into noble gases"
T.H.V.T.Dias, P.J.B.M.Rachinhas, J.A.M.Lopes, F.P.Santos, L.M.N.Távora, C.A.N.Conde, A.D.Stauffer
App. Comput. Engng. 2(1):11-16, 2003
- "The transmission of photoelectrons emitted from CsI into Xe, Ar, Ne and their mixtures: a Monte Carlo study of the dependence on E/N and incident VUV photon energy."
T.H.V.T.Dias, P.J.B.M.Rachinhas, J.A.M.Lopes, F.P.Santos, L.M.N.Távora, C.A.N.Conde, A.D.Stauffer.
J.Phys.D: Appl.Phys.37(2004)540-549
- "Intrinsic limitations in the energy resolution of drift-field based radiation detectors: a Monte Carlo simulation study of Xe-filled counters"
L.M.N. Távora, C.A.N. Conde, F.P. Santos, T.H.V.T. Dias, P.J.B.M. Rachinhas
Rad. Phys.and Chem.71(2004)723
- Papers in conference proceedings
- "A New dual Anode Microsrip Plate Chamber for X-rays: Experimental Results"
L.P.M.M.Carita, S.J.C.do Carmo,F.P.Santos, C.A.N.Conde
Presented at IEEE Nuclear Science Symposium & Medical Image Conference, November 2006, S.Diego CA

"Photoelectron Collection Efficiency in Mixtures of Noble Gases with CF₄"

J.Escada, P.J.B.M.Rachinhas, T.H.V.T.Dias, F.P.Santos, J.A.M.Lopes, C.A.N.Conde, A.D.Stauffer
Presented at IEEE Nuclear Science Symposium & Medical Image Conference, November 2006, S.Diego CA

"Radial Distribution of Primary e⁻ in the Xenon Ionization Cloud for X-ray Energies near the L Absorption Edge"

Filomena P.Santos, Teresa H.V.T.Dias, A.D.Stauffer and C.A.N.Conde Proc. SASP90 (7th Symposium on Atomic and Surface Physics, 18-24 March 1990, Obertaun, Austria). Eds. T.D.Mark and F.Howorka, Universitat Innsbruck, Studia Universitat Innsbruck publishers, pp 145-8.

"The Primary Electron Cloud in Xenon for X-rays in the 0.1 to 10 keV range"

Proc. of 2nd London Conference on Position Sensitive Detectors, 4-7 Sept. 1990, Imperial College London, in Nucl. Inst. & Meth. A310(1991)137-9

"A Monte Carlo simulation study of electron loss to the entrance window in xenon filled X-ray detectors"

F.P.Santos, T.H.V.T.Dias, A.D.Stauffer, C.A.N.Conde
Summary Transactions of ISRP-5, (International Symposium on Radiation Physics, Dubrovnik, Yugoslavia, 10-14 June 1991), pgii-23

"Xenon ion charge distribution resulting from X-ray absorption in xenon - a Monte Carlo simulation"

F.P.Santos, T.H.V.T.Dias, C.A.N.Conde
Proc. of SASP 92 (8th Symposium on Atomic and Surface Physics, Pampeago, Trentino, Italy 19-25 Jan 1992), D. Bassi, M.Scotoni and P. Tosi eds., Universita di Trento, pp 2.97-2.101

"The VUV Electroluminescence of Xenon: a Tridimensional Monte Carlo Calculation".

F.P. Santos, T.H.V.T. Dias, A.D. Stauffer and C.A.N. Conde.
Proc. of VUV 10 (10th. Int. Conf. on VUV Radiation Physics, Paris, France, 27-31 July 1992), ed. by Y.Petroff (Maison de la Chimie, Paris 1992), p. mo-82.

"A Monte Carlo Simulaton of Xenon Filled Cylindrical Proportional Counters"

P.M.Rachinhas, T.H.V.T.Dias, F.P. Santos, A.D. Stauffer and C.A.N. Conde.
Conf. Rec. of "The 1993 IEEE Nuclear Science Symposium and Medical Imaging Conference", San Francisco, USA, Oct. 31- Nov. 6 1993, 1(1993)283-287

"The Fano Factor and w-Value for X-rays in Xenon Near the L and K edges, Allowing for Electron Impact Inner-Shell Photoionization"

F.P. Santos, T.H.V.T.Dias, P.M.Rachinhas, R.E.Morgado and C.A.N. Conde.
Proc. of XIIth. ESCAMPIG 94 (12th Europhysics Sectional Conference on the Atomic and Molecular Physics of Ionized Gases, Leeuwenhorst, Noordwijkerhout, Holland, 22-26 August 1994), ed. M.C.M. van de Sanden (Eindhoven), EPS Europhysics Conference Abstracts vol.18E p.71 1994,

"Pulse Height Spectrum Distortion in Gaseous xenon detectors for soft x-rays: Experimental Results"

F.P.Santos, J.M.F.dos Santos, T.H.V.T.Dias, C.A.N.Conde
Conf. Rec. of "The 1994 IEEE Nuclear Science Symposium and Medical Imaging Conference", Norfolk, VA, USA, Oct. 30- Nov 5 1994, pp. 192-195

"Electron Relaxation Times in Gaseous Xenon: a Monte Carlo Study"

T.H.V.T.Dias, F.P.Santos, P.J.B.M.Rachinhas, A.D.Stauffer
Proc. of European Physical Society - ECAMP5 (The 5th Conference on Atomic and Molecular Physics, Edinburg, UK, 3-7 April 1995), Europhysics Conference Abstracts Vol.19A (1995) p.541 series ed. R.Pick, managing ed. G.Thomas (Geneve)

"The response of xenon gas proportional scintillation counters to K α and K β fluorescence-escape events"

J.M.F.dos Santos, T.H.V.T.Dias, F.P.Santos, J.A.M.Lopes, J.F.C.A.Veloso, P.J.B.M.Rachinhas, R.E.Morgado, A.D.Stauffer, C.A.N.Conde
Conf. Rec. of "The 1995 IEEE Nuclear Science Symposium and Medical Imaging Conference" S.Francisco, California, USA, 21-28 Oct. 1995, pp. 93-96

"Energy resolution of xenon proportional counters: experimental and Monte Carlo results for 5.9keV x rays"

P.J.B.M.Rachinhas, T.H.V.T.Dias, A.D.Stauffer, F.P.Santos, C.A.N.Conde
Conf. Rec. of "The 1995 IEEE Nuclear Science Symposium and Medical Imaging Conference" S.Francisco, California, USA, 21-28 Oct. 1995, pp. 90-92

"A Monte Carlo simulation study of the energy linearity and energy resolution of xenon x-ray detectors"

T.H.V.T.Dias, F.P.Santos, P.J.B.M.Rachinhas, A.D.Stauffer and C.A.N.Conde
Proc. of EDXRS-96 (European Conference on Energy Dispersive x-ray Spectrometry), Lisboa 23-29 Junho 1996, L.Carvalho (CFAUL, Universidade de Lisboa) ed., pp.74

"Modeling of xenon gas detectors for soft x-rays: recent developments"

T.H.V.T.Dias, P.J.B.M.Rachinhas, F.P.Santos, A.D.Stauffer and C.A.N.Conde
Presented at EPS-10, Trends in Physics (10th. General Conference of the European Physical Society, Sevilla, Spain, 9-13 Sept. 1996), M.Lozano Leyva and C.M.Ferreira eds. p.292.

"W-values and energy linearity in xenon gas detectors near the K-absorption edge: simulation and experimental results"

T.H.V.T.Dias, J.M.F.dos Santos, F.P.Santos, P.J.B.M.Rachinhas, C.A.N.Conde and A.D.Stauffer
Conference Record of 1996 IEEE Nuclear Science Symposium & Medical Image Conference (3-9 November 1996, Anaheim, California, USA), 2(1997)758-62.

"The electroluminescence of Xe-Ne gaseous mixtures: a Monte Carlo simulation study"

F.P.Santos, T.H.V.T.Dias, P.J.B.M.Rachinhas, A.D.Stauffer and C.A.N.Conde
Conference Record of 1996 IEEE Nuclear Science Symposium & Medical Image Conference (3-9 November 1996, Anaheim, California, USA), 2(1997)754-57.

-“The Effect of Electron Multiplication in the Electroluminescence Yield of pure Xe and Xe-Ne Mixtures: Gas Proportional Scintillation Counter and Simulation Results”

T.H.V.T.Dias, F.P.Santos, P.J.B.M.Rachinhas, F.I.G.M.Borges, J.M.F. dos Santos, A.D.Stauffer, C.A.N.Conde

Conference Record of 1997 IEEE Nuclear Science Symposium & Medical Image Conference (9-15 November 1997, Albuquerque, NM, USA) 1(1998)447-451.

-“The Response of a Gas Proportional Scintillation Counter to Conversion Electrons: Simulation and Experimental Results”

T.H.V.T.Dias, P.J.B.M.Rachinhas, J.A.M.Lopes, P.C.P.S.Simões, R.E.Morgado, J.M.F.dos Santos, F.P.Santos, A.D.Stauffer, C.A.N.Conde

Conference Record of 1997 IEEE Nuclear Science Symposium & Medical Image Conference (9-15 November 1997, Albuquerque, NM, USA) 1(1998)444-446.

-“Operation of gas proportional scintillation counters in a low charge multiplication regime”

F.I.G.M.Borges, J.M.F.dos Santos, T.H.V.T.Dias, F.P.Santos, P.J.B.M.Rachinhas, C.A.N.Conde

Presented at 1998 Symposium on Radiation Measurements and Applications (12-14 May 1998, Ann Arbor, Michigan USA)

-“Asymmetry effects in the full-energy X-ray spectra in xenon: a Monte Carlo simulation study”

T.H.V.T.Dias, P.J.B.M.Rachinhas, F.P.Santos, C.A.N.Conde and A.D.Stauffer

Presented at 1998 Annual Meeting of the Division of Atomic and Molecular and Optical Physics-DAMOP98 (27-30 May 1998 Santa Fé, NM, USA).

-“Conversion electron detection with gas proportional scintillation counters”

P.J.B.M.Rachinhas, P.C.P.S.Simões, J.A.M.Lopes, T.H.V.T.Dias, R.E.Morgado, J.M.F.dos Santos, F.P.Santos, J.F.C.A.Veloso, A.D.Stauffer, C.A.N.Conde

Presented at 1998 Symposium on Radiation Measurements and Applications (12-14 May 1998, Ann Arbor, Michigan USA)

-“The w-value and the Fano factor of xenon-neon gas mixtures: a Monte Carlo simulation study”

F.P.Santos, T.H.V.T.Dias, P.J.B.M.Rachinhas, C.A.N.Conde, A.D.Stauffer

Conference Record of IEEE Nuclear Science Symposium & Medical Image Conference (8-13 November 1998, Toronto, Canada) 1999

-“Absorption of electrons in xenon for energies up to 300 keV: a Monte Carlo simulation study”

P.J.B.M.Rachinhas, T.H.V.T.Dias, F.P.Santos, C.A.N.Conde, A.D.Stauffer

Conference Record of IEEE Nuclear Science Symposium & Medical Image Conference (8-13 November 1998, Toronto, Canada) 1999

-“A Monte Carlo simulation study of the electron cloud produced in xenon by electrons with energies up to 200keV”

P.J.B.M.Rachinhas, T.H.V.T.Dias, F.P.Santos, C.A.N.Conde, A.D.Stauffer

Presented at ICPEAC'99 - XXI International Conference on the Physics of Electronic and Atomic Collisions, July 22-27, Sendai, Japan

-“Photoelectron collection efficiency in a xenon atmosphere: a Monte Carlo study”

P.J.B.M.Rachinhas, J.A.M.Lopes, T.H.V.T.Dias, F.P.Santos, C.A.N.Conde and A.D.Stauffer

Conference Record of 1999 IEEE Nuclear Science Symposium & Medical Image Conference (24-30 October 1999, Seattle, USA) ??????

-“Simulation of X-ray tubes for imaging applications”

L.M.N.Távora, E.J.Morton, F.P.Santos, and T.H.V.T.Dias

Conference Record of 1999 IEEE Nuclear Science Symposium & Medical Image Conference (24-30 October 1999, Seattle, USA) Vols 1-3, 448-454 1999

-“Quenching of the Scintillation of Xe-Ne Mixtures: a Monte Carlo Study.”

F.P. Santos, T.H.V.T. Dias, P.J.B.M. Rachinhas, L.M.N. Távora, C.A.N. Conde, and A.D. Stauffer.

MC 2000 - International Conference on Advanced Monte Carlo for Radiation Physics, Particle Simulation and Applications, 23 - 26 Oct

2000, Instituto Superior Técnico, Lisboa, Portugal.

Book of Abstracts, L. Oliveira and A. Kling eds., Instituto de Tecnologia Nuclear, Lisboa p. 159 160, 2000.

Conference Proceedings: M. Nakagawa, P. Vaz, F. Barão, A. Kling, and L. Távora eds., Springer Verlag, Heidelberg, 2001, in press

-“Photoelectron Collection Efficiency in Rare Gases: A Monte Carlo Study.”

P.J.B.M. Rachinhas, J.A.M. Lopes, T.H.V.T. Dias, F.P. Santos, C.A.N. Conde, and A.D. Stauffer.

MC 2000 - International Conference on Advanced Monte Carlo for Radiation Physics, Particle Simulation and Applications, 23 - 26 Oct

2000, Instituto Superior Técnico, Lisboa, Portugal.

Book of Abstracts, L. Oliveira and A. Kling eds., Instituto de Tecnologia Nuclear, Lisboa, p. 157 158, 2000.

Conference Proceedings: M. Nakagawa, P. Vaz, F. Barão, A. Kling, and L. Távora eds., Springer Verlag, Heidelberg, 2001, in press.

-“The energy resolution of Xenon-Neon filled gas proportional-scintillation counters for x-rays below 2keV”.

F.I.G.M.Borges, F.P.Santos, T.H.V.T.Dias, P.J.B.M. Rachinhas, C.A.N. Conde, A.D.Stauffer.

Presented at IEEE Nuclear Science Symposium & Medical Image Conference, 4-10 November 2001, San Diego, CA, U.S.A. Conference

Record, John Valentine ed., p 294-297, 2001.

Conference Record???

-“A simulation study of the electroluminescence yield of xenon and xenon-neon mixtures contaminated by water vapor.

*F.P.Santos, T.H.V.T.Dias, L.M.N.Távora, P.J.B.M.Rachinhas, C.A.N.Conde, A.D. Stauffer

Presented at the 10th Symposium on Radiation Measurements and Applications, May 21-23, 2002, University of Michigan, Ann Arbor, MI

-“An experimental investigation of the M-discontinuities in the response of xenon gas detectors to x-rays in the 0.1 to 2 keV range”

Presented at the 10th Symposium on Radiation Measurements and Applications, May 21-23, 2002, University of Michigan, Ann Arbor, MI

-“The performance of a gas proportional-scintillation counter for x-ray spectrometry in the 0.1-3 keV range”

F.I.G.M.Borges, J.M.F.dos Santos, T.H.V.T.Dias, F.P.Santos, C.A.N.Conde

5th International Topical Meeting on Industrial Radiation and Radioisotope Measurement Applications, IRRMA-V Bologna, Italy, 9-14 June 2002

-“Xenon-Neon gas proportional-scintillation counters for x-rays below 2 keV: experimental results.”

F.I.G.M.Borges, F.P.Santos, J.M.F.Santos, T.H.V.T.Dias, P.J.B.M.Rachinhas, C.A.N.Conde

Presented at IEEE Nuclear Science Symposium & Medical Image Conference, 10-16 Nov.2002, Norfolk, VA
Conference Record ????????????

-"Dependence of the photoelectron collection efficiency in noble gases on the incident VUV photon energy"
P.J.B.M.Rachinhas, T.H.V.T.Dias, J.A.M.Lopes, F.P.Santos, L.M.N.Távora,C.A.N.Conde, A.D.Stauffer
Presented at IEEE Nuclear Science Symposium & Medical Image Conference, 10-16 Nov.2002, Norfolk, VA

-"Intrinsic limitations in the energy resolution of drift-field based radiation detectors: a Monte Carlo simulation study of Xe-filled counters"

L.M.N. Távora, C.A.N. Conde, F.P. Santos, T.H.V.T. Dias, P.J.B.M. Rachinhas
Presented at 9th International Symposium on Radiation Physics (ISRP-9) Cape Town, South Africa, 24-31 October 2003

-"Monte Carlo simulation study of the characteristics of Xe-Ne gas mixtures as detection media in gas proportional ionization counters"
F. P. Santos, P. J. B. M. Rachinhas, T. H. V. T. Dias, F. I. G. M. Borges, A. D. Stauffer and C. A. N. Conde
Presented at IEEE Nuclear Science Symposium & Medical Image Conference, 16-22 October 2004, Rome

-"Experimental Study of Xe-Ne Proportional Counters for X-Ray Detection"
F. I. G. M. Borges, F. P. Santos, F. Amaro, T. H. V. T. Dias, J. F. C. A. Veloso, and C. A. N. Conde
Presented at IEEE Nuclear Science Symposium & Medical Image Conference, 16-22 October 2004, Rome

-"A Monte Carlo Study of Backscattering Effects in the Photoelectron Emission from a CsI Photocade into Ar-CH4 mixtures"
J. Escada, J.B.M. Rachinhas, T.H.V.T. Dias, J.A.M. Lopes, F.P. Santos, C.A.N.Conde
Presented at IEEE Nuclear Science Symposium & Medical Image Conference, 16-22 October 2004, Rome

-"Photoelectron Collection Efficiency in Mixtures of Noble Gases with CF4"
J.Escada, P.J.B.M.Rachinhas, T.H.V.T.Dias, F.P.Santos, J.A.M.Lopes, C.A.N.conde, A.D.Stauffer
Presented at IEEE Nuclear Science Symposium & Medical Image Conference, 29 Oct.-4 Nov. 2006

- "A new dual anode microstrip plate chamber for x-rays: experimental results".
L.P.M.M.Carita,S.C.do Carmo, F.P.Santos, C.A.N.Conde
Presented at IEEE Nuclear Science Symposium & Medical Image Conference, 29 Oct.-4 Nov. 2006

Comunicações

n/a

Línguas

Language

Reading

Writing

Conversation

n/a

Dados para a Candidatura: SFRH/BD/46372/2008 (Bolsa de Doutoramento)

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Nome Completo: Rui Miguel Curado da Silva

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Habilitações Académicas do Investigador

Ano	Grau	Domínio científico	Designação do Curso	N.Anos
2002	DOUTORAMENTO	Física		

Título da Tese (se aplicável): Etude de polarimètres basés sur les détecteurs de CdTe en astrophysique X et gamma

Instituição (Atrib. Grau): . Universitée Louis Pasteur, Estrasburgo, França

Classificação: Mention Très Honorable avec les félicitations du jury

Ano	Grau	Domínio científico	Designação do Curso	N.Anos
1997	MESTRADO	Física Tecnológica		

Título da Tese (se aplicável): Circuitos Analógicos de Polarização e Acoplamento Óptico para Contadores Gasosos de Cintilação Propo

Instituição (Atrib. Grau): Faculdade de Ciências e Tecnologia . Universidade de Coimbra

Classificação: Muito Bom na tese/ 17 valores na componente lectiva

Ano	Grau	Domínio científico	Designação do Curso	N.Anos
1994	LICENCIATURA	Engenharia Física		

Título da Tese (se aplicável):

Instituição (Atrib. Grau): Faculdade de Ciências e Tecnologia . Universidade de Coimbra

Classificação: 15 valores

Actividades anteriores e situação actual em termos científicos e/ou profissionais:

Período	Cargo ou Categoria	Instituição
1º semestre 93/94	Estudante Erasmus	Dipartimento di Fisica, Universita di Padova, Italia
de 01/03/1996 a 30/09/1998	Monitor	Observatório da Universidade de Coimbra do Departamento de Matemática da Universidade de Coimbra
de 01/10/1997 a 30/09/1998	Bolseiro Técnico de Investigação (BTI/14504/97/PRAXISXXI)	Universidade de Coimbra
desde 01/10/2002	Bolseiro de Pós-Doutoramento (BPD/11670/2002)	Universidade de Coimbra

Área de actividade científica

Instrumentação atómica e nuclear e instrumentação para astrofísica de raios X e raios gama.

Área de actividade científica (Domínio de especialização, investigação e outras competências/actividades)**Domínio de especialização**

Física tecnológica, detectores de radiação X e gama para astrofísica

Actuais interesses de investigação

Actualmente o candidato está a desenvolver a sua actividade científica no Departamento de Física da Universidade de Coimbra através de uma bolsa de pós-doutoramento da Fundação para a Ciência e Tecnologia. Essa actividade no desenvolvimento de um polarímetro, baseado em elementos semicondutores de telureto de cádmio (CdTe), para o estudo de radiação X e γ polarizada em astrofísica no âmbito de uma cooperação com o IASF (Istituto di Astrofisica Spaziale e Fisica Cosmica) de Bolonha, Itália. Paralelamente o candidato está a dirigir um projecto de desenvolvimento de detectores gasosos de radiação baseados em microestruturas para a detecção de raios X solares em cooperação com a Academia das Ciências da China.

Outras competências/actividades

Actualmente membro da direcção da Sociedade Portuguesa de Astronomia desde Setembro de 2003

Co-autor das classes do programa GEANT 4 (CERN) que simulam o efeito Compton para radiação polarizada (a partir das versões 3.x, 2001).

Coordenação e projecto do experimento POLCA (POLarimetry with Cadmium telluride Array) - primeiro teste de um polarímetro de raios X e raios gama no seio de um acelerador de sincrotrão - realizado em Junho de 2002 no ERSF (European Synchrotron Radiation Facility), Grenoble, França.

Experiência na orientação

Agosto 2003 a Dezembro de 2004:

Trabalho do bolseiro de investigação Eng. Nuno Filipe Camarinho Mendes no âmbito dos projectos POCTI/FNU/49561/2002 e POCTI/FP/FNU/50228/2003

Desde Fevereiro de 2005:

Trabalho do bolseiro de investigação Lic. Matilde Teixeira Dias Castanheira no âmbito do projecto POCTI/FP/FNU/50228/2003

Participação em Projectos

Coordenador dos projectos:

- ?Detectores de CdTe para polarimetria de raios X e de raios gama? (POCTI/FP/FNU/50228/2003);
- "Plano focal de CdTe para telescópio espacial de raios gama equipado de lentes de Laue" (PTDC/CTE-SPA/65803/2006).

Membro da equipa nos projectos:

- ?Processos Físicos em Detectores Gasosos com Microestruturas II? (CERN/FIS/43787/2001);
- ?Processos Físicos em Detectores Gasosos com Microestruturas III? (POCTI/FNU/49561/2002);
- "Técnicas para espectrometria de raios-gama de baixa energia à temperatura ambiente" (POCTI/FP/FNU/50222/2003).

Prémios e distinções

Ano	Nome do prémio ou distinção	Nome da entidade promotora
n/a		

Publicações

Thesis

"Circuitos Analógicos de Polarização e Acoplamento Óptico para Contadores Gasosos de Cintilação Proporcional, Dedicados à Detecção de Raios X Solares" - Dissertação de Mestrado, Departamento de Física, Universidade de Coimbra, Outubro de 1997.

"Etude de polarimètres basés sur les détecteurs de CdTe en astrophysique X et gamma" - Dissertação de Doutoramento, Laboratoire PHASE, CNRS, Université Louis Pasteur, Strasbourg, França, 1 de Outubro de 2002.

Papers in international scientific periodicals with referees

"The Optical Coupling of Analog Signals", J. Basílio Simões, Rui M. C. Silva, António Miguel L. S. Morgado, Carlos M. Correia, IEEE Trans. Nucl. Sci. Vol. 43 n°3, pag. 1672-1674 (1996).

"An Ellipsoidal Grid Gas Proportional Scintillation Counter", Rui M. C. Silva, J. M. F. Dos Santos e C. A. N. Conde, Nucl. Instr. Meth., Vol A, 422, pag. 305-308 (1999).

"Compact High Voltage and Optocoupled Electronic for Gas Proportional Scintillation Counters", Rui M. C. Silva e C. A. N. Conde, IEEE Trans. Nucl. Sci., Vol 47 n°6, pag. 2075-2077 (2000).

"A Large Area Gas Proportional Scintillation Counter for Ballon Born Solar X-ray Spectrometry", H. Natal da Luz, J. F. C. A. Veloso, J. M. F. dos Santos, C. A. N. Conde, Rui M. C. Silva, H.-R. Pan, Z.-Y. Li e H.-A. Lin, IEEE Trans. Nucl. Sci., Vol 49 n°5, pag. 2488-2491 (2002).

"A CdTe position sensitive spectrometer for hard X- and soft γ -ray polarimetry", E. Caroli, J.B. Stephen, W. Dusi, G. Bertuccio, M. Sampietro, A.J. Bird, A.J. Dean, R.M. Curado da Silva, P. Siffert, V. Reglero, W. Yu et C. Zhang, Nucl. Instr. and Meth. in Physics Research, Vol. A, 477, pag. 567-573, (2002).

"A study of prototype CdTe hard X and gamma-ray detectors", E. Caroli, N. Auricchio, A. Donatia, F. Schiavonea, J. B. Stephen, G.

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Ventura, R. M. Curado da Silva, P. Siffert, M. Hage-Ali, Gianfranco Taiocchic, Nucl. Instr. Meth., Vol A, 513, pag. 350-356 (2003).

"Experimental polarimetric study of an hard X-ray energy telescope prototype", R. M. Curado da Silva, Ezio Caroli, M. Hage-Ali, J. B. Stephen, M. Ayoub, A. Donati, F. Schiavone, G. Ventura and P. Siffert, IEEE Trans. Nucl. Sci., Vol. 50, nº 4, pag. 1198-1203 (2003).

"CIPHER, a polarimeter telescope concept for Hard X-ray Astronomy", R. M. Curado da Silva, E. Caroli, J. B. Stephen and P. Siffert, Experimental Astronomy, Vol. 15, nº1, pag. 45-65, (2003).

"Hard-X and Soft gamma ray polarimetry with CdTe array prototypes", R. M. Curado da Silva, E. Caroli, N. Auricchio, A. Donati, M. Hage-Ali, F. Schiavone, P. Siffert, J. B. Stephen, G. Ventura, IEEE Trans. Nucl. Sci., Vol. 51, nº 5, pp. 2478-2484 (2004).

"Polarimetric Performances of a Wide Field CdTe Monitor for X- and γ -ray Astrophysics", R. M. Curado da Silva, E. Caroli, J. B. Stephen, N. F. C. Mendes e F. Frontera, IEEE Trans. Nucl. Sci. (2005), Vol. 53, nº3, pag. 383-388 (2006).

"Dual-Cathode Csl Covered Microstrip Plate as VUV High Efficiency Photosensor", C.A.N. Conde, D. S. A. P. Freitas, N. F. C. Mendes, R.M. Curado da Silva, aceite para publicação na IEEE Trans. Nucl. Sci. (2006).

"A focal plane detector design for a wide-band Laue-lens telescope", E. Caroli, L. Amati, N. Auricchio, Yuriy Bezsmolnyy, C. Budtz-Jørgensen, R. M. Curado da Silva, F. Frontera, J. B. Stephen, G. Ventura, Experimental Astronomy, vol. 20, p. 341-351, 2006.

"Polarisation measurements with a CdTe pixel array detector for Laue hard X-ray focusing telescopes", E. Caroli, R. M. Curado da Silva, J.B. Stephen, F. Frontera, A. Pisa, S. Del Sordo, Experimental Astronomy vol 20, p353-364, 2006.

"Simulated Performance of CZT-Based Focal Plane Detectors for Gamma-Ray Lenses", Andreas Zoglauer, Cornelia B. Wunderer, Georg Weidenspointner, Ezio Caroli, Rui M. Curado da Silva, Steven E. Boggs, Peter von Ballmoos, and Jürgen Knödseder, submetido a publicação no IEEE Trans. Nucl. Sci. (2006).

"Experimental polarimetric study of a gamma-ray CZT focal plane prototype", R M Curado da Silva, E Caroli, J B Stephen, A Pisa, N Auricchio, S Del Sordo, F Frontera, V Honkimaki, F Schiavone, G Ventura, accepted for publication in J. Appl. Phys (2008).

"Performance of a room temperature gas proportional scintillation counter in X-ray analysis of metallic alloys excited with alpha particles" F.I.G.M. Borges, S.J.C. do Carmo, T.H.V.T. Dias, F. P. Santos, F.P.S.C. Gil, A.M.F. Trindade, R.M. Curado da Silva, C.A.N. Conde, accepted for publication in Advances in X-ray Analysis (2008).

Papers in conference proceedings

"The Optical Coupling of Analog Signals", J. Basílio Simões, Rui M. C. Silva, António Miguel L. S. Morgado, Carlos M. Correia, Conference Record Nuclear Science Symposium em São Francisco em Outubro de 1995, Vol. 1, pag. 315-317.

"High Voltage and Optically Coupled Analogue Interface Circuits for Gas Proportional Scintillation Counters", Rui M. C. Silva e C. A. N. Conde, Conference Record Nuclear Science Symposium em Anaheim (Los Angeles) Novembro 1996, Vol. 2, pag. 751-753.

"An Ellipsoidal Grid Gas Proportional Scintillation Counter", Rui M. C. Silva, J. M. F. Dos Santos and C. A. N. Conde, Conference Record of Symposium on Radiation Measurements and Applications, Ann Arbor, Michigan, USA, Maio de 1998.

"Compact High Voltage and Optocoupled Electronic for Gas Proportional Scintillation Counters", Rui M. C. Silva et C. A. N. Conde, Conference Record of 1998 IEEE Nuclear Science Symposium (N21-6), Toronto, Novembro de 1998.

"The CIPHER telescope for hard X and soft gamma-ray polarimetry", E. Caroli, J.B. Stephen, W. Dusi, A.J. Bird, A.J. Dean, G. Bertuccio, M. Sampietro, W. Yu, C. Zhang, R.M. Curado da Silva, P. Siffert and V. Reglero, Proceeding Series of American Institute of Physics on The Fift Compton Symposium, AIP Conference Proceeding, Vol. 510, pag. 809-813 (2000).

"Gamma-ray polarisation measurements with INTEGRAL/IBIS", J. B. Stephen, E. Caroli, R. M. Curado da Silva and L. Foschini, à publier dans le AIP Conference Proceedings series, apresentado no Gamma-Ray Astrophysics 2001, Baltimore, Maryland, USA, 2001.

"Monte Carlo Polarimetric Efficiency Simulations for a Single Monolithic CdTe Thick Matrix", R. M. Curado da Silva, M. Hage-Ali, E. Caroli, P. Siffert and J. B. Stephen, Proceedings of the Monte Carlo 2000 Conference, Lisbon, Portugal, 23-26 October, 2000, pag. 87-92.

"Hard X-ray polarimetry with a thick CdTe position sensitive spectrometer", E. Caroli, G. Bertuccio, A. Cola, R.M. Curado da Silva, A. Donati, W. Dusi, G. Landini, P. Siffert, M. Sampietro, J.B. Stephen, SPIE Proceedings on X-ray and Gamma-ray instrumentation for Astronomy XI, Vol. 4140, pag. 573-583 (2000).

"Monte Carlo polarimetric simulations of a hard X-ray energy telescope", R. M. Curado da Silva, E. Caroli, J.B. Stephen and P. Siffert, SPIE Proceedings on X-ray and Gamma-ray instrumentation for Astronomy XII, San Diego, USA, 29 July to 3 August 2001, Vol. 4497, pag. 70-78 (2001).

"Monte Carlo Simulations of the Design of a Hard X-ray Telescope Optimised for Polarimetry", R. M. Curado da Silva, E. Caroli, J.B. Stephen and P. Siffert, apresentado no Astronomical Telescopes and Instrumentation Conference, SPIE, 22-28 August 2002, Waikoloa, Hawaii, USA.

"Polarimetric performances of an hard X-ray energy telescope prototype", R. M. Curado da Silva, Ezio Caroli, M. Hage-Ali, J. B. Stephen, M. Ayoub, W. Dusi, G. Ventura and P. Siffert, Conference Record Nuclear Science Symposium (N9-17), 10-16 Novembro 2002, Norfolk, USA.

"Hard-X and Soft gamma ray polarimetry with CdTe array prototypes", E. Caroli, N. Auricchio, R. M. Curado da Silva, A. Donati, M. Hage-Ali, F. Schiavone, P. Siffert, J. B. Stephen, G. Ventura, a publicar no Conference Record 13th International Workshop on Room-Temperature Semiconductor X- and Gamma-Ray Detectors (R17-3), 19-25 Outubro 2003, Portland, Oregon, USA.

"Polarimetric Performances of a Wide Field CdTe Monitor for X- and γ -ray Astrophysics", R. M. Curado da Silva, E. Caroli, J. B. Stephen, N. F. C. Mendes e F. Frontera, 14th International Workshop on Room-Temperature Semiconductor X- and Gamma-Ray Detectors (R11-64), 16-22 Outubro 2004, Roma, Italia.

"Monte Carlo Evaluation of Polarimetric Capabilities of a Hard X-ray CdTe Focal Plane", R. M. Curado da Silva, E. Caroli, J. B. Stephen, N. F. C. Mendes, F. Frontera, G. Pareschi, S. del Sordo, 14th International Workshop on Room-Temperature Semiconductor X- and Gamma-Ray Detectors (R11-60), 16-22 Outubro 2004, Roma, Italia.

"Large area and high-pressure GPSC/MSGC for space solar X-ray spectrometry", N. F. C. Mendes, R.M. Curado da Silva, Matilde T. D. Castanheira, J. F. C. A. Veloso, D. S. A. P., C.A.N. Conde, Fei Wei and Huaan Lin, IEEE Nuclear Science Symposium, Porto Rico, Outubro de 2005.

"Dual-Cathode CsI Covered Microstrip Plate as VUV High Efficiency Photosensor", D.S.A.P. Freitas, R.M. Curado Silva, N.C. Mendes, C.A.N. Conde, IEEE Nuclear Science Symposium, Porto Rico, Outubro de 2005.

"A focal plane detector design for a wide-band Laue-lens telescope", E. Caroli, L. Amati, N. Auricchio, Yuriy Bezsmolnyy, C. Budtz-Jørgensen, R. M. Curado da Silva, F. Frontera, J. B. Stephen, G. Ventura, Workshop on Focusing Telescopes in Nuclear Astrophysics, 12-15 de Setembro de 2005, Bonifácio, Córsega, França.

"Polarisation performances of CdTe pixel detector for Laue hard X-ray focusing telescopes", E. Caroli, R. M. Curado da Silva, J.B. Stephen, F. Frontera, A. Pisa, S. Del Sordo, Workshop on Focusing Telescopes in Nuclear Astrophysics, 12-15 de Setembro de 2005, Bonifácio, Córsega, França.

"A focal plane detector design for a wide band Laue-lens telescope", E. Caroli, N. Auricchio, G. Bertuccio, C. Budtz-Jørgensen, R. M. Curado da Silva, S. Del Sordo, F. Frontera, E. Quadri, P. Ubertini, G. Ventura, Proceedings of the SPIE, Volume 6266, pp. 62662A (2006).

"Simulated Performance of CZT-Based Focal Plane Detectors for Gamma-Ray Lenses", Andreas Zoglauer, Cornelia B. Wunderer, Member, IEEE, Georg Weidenspointner, Ezio Caroli, Rui M. Curado da Silva, Steven E. Boggs, Peter von Ballmoos, and Jürgen Knödseder, Conference Record 14th International Workshop on Room-Temperature Semiconductor X- and Gamma-Ray Detectors (R12-1), 30 Outubro a 3 Novembro 2006, San Diego, EUA.

"A Monte Carlo Study of the Electron Clouds Produced by Polarized X-Rays in Xenon" G.S. Botte, P.J.B.M. Rachinhas, T.H.V.T. Dias, F.P. Santos, L.M.N. Távora, R.M. Curado da Silva, C.A.N. Conde and A. D. Stauffer, Workshop on Medical Instrumentation Signal and Imaging, 11-12 April 2007, Aveiro, Portugal. Conference Proceedings: Electrónica e Telecomunicações, Revista do DETUA vol. 4, p. 857-859, 2007.

"Experimental polarimetric study of a gamma-ray CZT focal plane prototype", R M Curado da Silva, E Caroli, J B Stephen, A Pisa, N Auricchio, S Del Sordo, F Frontera, V Honkimaki, F Schiavone, G Ventura, aceite para apresentação oral no IEEE Nuclear Science Symposium (N59-5), 27 de Outubro a 3 de Novembro de 2007, Havai, EUA.

"A three-dimensional CZT detector as a focal plane prototype for Laue lens Telescope" E. Caroli, N. Auricchio, C. Budtz-Jørgensen, S. del Sordo, R. M. Curado da Silva, I. Kuvvetli, L. Natalucci, E. Quadri, G. Ventura, A. Zappettini accepted for presentation in SPIE Astronomical Instrumentation, 23 to 28 June, 2008, Marseille, France.

Comunicações

Oral communications by invitation

"High Voltage and Optically Coupled Analogue Circuits for Gas Proportional Scintillation Counters Constructed for Solar X-rays detection" - Center for Space Science and Applied Resources, Academia das Ciências da China, Pequim, China, 26 de Agosto de 1997

"Gas Proportional Scintillation Counters for Solar X-rays Detection", Max Plank Institut Semiconductor Laboratory, Munique, Alemanha, 27 de Janeiro de 1998.

"Simulations de Polarimétrie X et Gamma pour le Télescope CIPHER (Coded Imager and Polarimeter for High Energy Radiation)", Laboratoire PHASE, CNRS, Strasbourg, France, 15 de Dezembro de 2000.

"Polarimetric performance of the CIPHER (Coded Imager and Polarimeter for High Energy Radiation) telescope for X-ray and gamma ray astronomy" Observatório Astronómico da Universidade de Coimbra, Coimbra, Portugal, 4 de Janeiro de 2002.

"Montecarlo Simulation and Experimental Polarimetric Study of the CIPHER Telescope", Centro de Astrofísica da Universidade do Porto, Porto, 21 de Abril de 2004.

"CIPHER, a CdTe Based Telescope for Hard X-ray and Soft γ -ray Polarimetry", CSSAR, Academia das Ciências da China, Pequim, China, 11 de Janeiro de 2005.

"The Gamma-Ray Imager Mission for ESA Cosmic Vision", Center for Space Radiations, Universidade de Louvain-la-Neuve, Bélgica, 11 de Maio de 2007.

Línguas

Language

French
English

Reading

Excellent
Excellent

Writing

Excellent
Excellent

Conversation

Excellent
Excellent

Italian

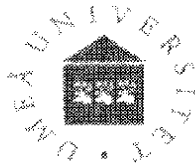
Excellent

Good

Excellent

FCT - Avaliação de Candidaturas Concurso para a atribuição de Bolsas Individuais 2008 | Print: 22-06-2011 13:06:00

25d



TEKNOLOGIE MAGISTEREXAMEN
MED RYMDTEKNIK SOM HUVUDÄMNE

*Degree of Master of Science in Engineering
with a major in Space Engineering*

Colin Paul Gloster

3 July 1980 (Date of birth)

uppfyller i enlighet med bestämmelserna i högskoleförordningen (SFS 1993:100)
samt universitetsstyrelsens beslut kraven för teknologie magisterexamen.

*has been awarded the Degree of Master of Science in Engineering in accordance with the
provisions of the Higher Education Ordinance (SFS 1993:100) and examination regulations
issued by the Board of Umeå University.*

Umeå 2006-06-16

På rektors vägnar

On behalf of the Vice Chancellor's Office

A handwritten signature in black ink, appearing to read 'Marie Wilhelmsson'.

Marie Wilhelmsson
Examenshandläggare

Degree Evaluation Officer





Colin Paul Gloster

3 July 1980 (Date of birth)

uppfyller härmed kraven för teknologie magisterexamen.
has been awarded the Degree of Master of Science in Engineering.

KURS Course	POÄNG Credit points	BETYG Grade	DATUM Date
Degree of Bachelor of Science in Computer Applications <i>Degree of Bachelor of Science in Computer Applications</i>	---	---	2006-06-16 ¹
Rymdfarkosters växelverkan med rymdmiljön <i>Space Environment Interaction</i>	05	5 <i>Pass with Distinction</i>	2004-10-25
Realtidssystem i rymden <i>Real Time Systems in Space</i>	05	4 <i>Four</i>	2004-10-26 ²
Rymdplattformen <i>The Observational Platform</i>	05	3 <i>Pass</i>	2005-01-21
Principer för rymdinstrument <i>Principles for Space Instruments</i>	05	4 <i>Four</i>	2005-01-27 ²
Rymdteknik - examensarbete <i>Space Technology, Master's Project</i>	20	Godkänd <i>Pass</i>	2005-11-28 ³

Titel på examensarbete(n)/Title of Degree Thesis (Theses)

Onboard software of the Mechanical and data Acquisition Support System spacecraft of the Young Engineers' Satellite 2

På rektors vägnar

On behalf of the Vice Chancellor's Office

Marie Wilhelmsson
Examenshandläggare

Degree Evaluation Officer

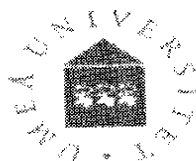
Tecknologie magisterexamen uppnås efter fullgjorda kursfördringar om sammanlagt minst 160 poäng. I dessa poäng ingår minst 80 poäng i huvudämnen varav 20 poäng utgör examensarbete. Kursernas omfattning anges av poängantalet, varvid 20 poäng motsvarar en termins heltidsstudier.
A Master of Science in Engineering degree is awarded after completion of courses carrying a total of at least 160 credit points (4 years of study). The major subject carries 80 of these credit points and includes a 20-credit points degree assignment. One credit point is equivalent to one week of full-time study, and an academic year comprises 40 credit points.

För kurs ges betyget Godkänd (3), icke utan beröm godkänd (4) eller Med beröm godkänd (5).
The grades awarded for the courses are Pass (3), Pass with Merit (4) or Pass with Distinction (5).

¹ Beslut fattat 2006-06-16 angående tillgodoräknad examen. Originalbevis utfärdat vid Dublin City University, Irland. / *Original degree certificate awarded at Dublin City University, Ireland. Decision concerning the evaluation of credits is approved by Umeå University and confirmed on 16 June 2006.*

² Studier vid Luleå tekniska universitet. Betygsgrader: (3) godkänd, (4) icke utan beröm godkänd eller (5) med beröm godkänd.
Studies at Luleå University of Technology, Sweden. The available grades are: Three (3), Four (4) and Five (5). A higher figure signifies a better grade.

³ För kurs ges betyget godkänd. / *The grade awarded for the course is 'Pass'.*



5. Information on the function of the qualification

5.1 Access to further study: The degree gives access to postgraduate training. For more information on higher education in Sweden, please go to point 8, appendix 2.

5.2 Professional status (if applicable): No special information is indicated; gives access to employment.

6. Additional information

6.1 Additional information: None.

6.2 Further information sources:

The National Agency for Higher Education (Högskoleverket) has been commissioned to act as the Swedish NARIC and is also part of ENIC. The NARIC/ENIC office provides information on education in Sweden. The address to the Agency is National Agency for Higher Education (Högskoleverket), P.O. Box 7851, SE - 103 99 Stockholm, phone + 46 8 5630 8500, fax + 46 8 5630 8650, <http://www.hsv.se>

Umeå University, SE-901 87 UMEÅ, phone +46 90 786 5000, <http://www.umu.se>

7. Certification of the supplement

7.1 Date: 28 June 2006

7.2 Signature and official stamp or seal (if used)

Marie Wilhelmsson

7.3 Capacity: Degree Evaluation Officer

8. Information on the national higher education system

Information on the Swedish higher education system of enclosure.

L LULEÅ UNIVERSITY OF TECHNOLOGY

Luleå University of Technology
Kiruna Campus

Official transcript of records for

PAUL COLIN GLOSTER
(Civic registration number 800703-7035)

Courses	Credits	Grade	Date	Note
Real Time Systems in Space	5.0	4	2004-10-26	1
Principles for Space Instruments	5.0	4	2005-01-27	1
Total sum:		10.0 credits		

The above is an excerpt from the register of student records.

Luleå, March 12, 2007

.....
Asa Wilk

Notes:

Grading system: 1) 5 (five) , 4 (four) , 3 (three) , G (pass)
40 credits represent a full academic year. 1 credit equals one week of full-time study.



Umeå University

COLIN PAUL GLOSTER

Official transcript of records for

COLIN PAUL GLOSTER
(Civic registration number 800703-+035)

Courses	Credits	Grade	Date	Note
RYMD06 Space Environment Interaction	5.0	5	2004-10-25	1
LABO Laboratory work	(1.0)	G	2004-10-25	2
TEOR Theory	(4.0)	5	2004-10-25	
RYMD02 The Observational Platform	5.0	3	2005-01-21	1
TEOR Theory	(5.0)	3	2005-01-20	
PROJ Project work	(0.0)	G	2005-01-21	2
RYMD03 Space Technology, Master's Project	20.0	G	2005-11-28	2
EXAM	(20.0)	G	2005-11-28	
Title on projectwork/paper: Onboard software of the Mechanical and data Acquisition Support System spacecraft of the Young Engineers' Satellite 2				
Total sum:		30.0 credits		

The above is an excerpt from the register of student records.

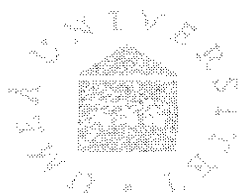
Umeå, March 14, 2007


.....
Carina Ytterström

Notes:

Grading system: 1) 5 Pass with Distinction , 4 Pass with Merit , 3 Pass ,
VG Pass with distinction , G Pass
2) Pass course only, G=Pass

40 credits represent a full academic year. 1 credit equals one week of full-time study.



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Area Servizi per la Didattica - Dirigente: Dr. M. Bellandi
Ufficio "Laureati" Responsabile: Dott.ssa M. Tognini - DOTT/mgs

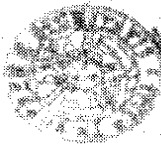
Pisa, 7 September 2007

TO WHOM IT MAY CONCERN

This is to certify that Mr. Colin Paul GLOSTER born on July the 3rd 1980 in Dublin (Irlanda) (ÉIRE), attended the second year of Ph.D. degree course in "Engineering of the information" (year 2006).

It is hereby certified that Mr. Colin Paul Gloster has formally provided notice that he shall quit the Ph.D. course in "Engineering of the information" instead of continuing with September the 9th 2007 as the final day of his studies.

The Administrative Responsible
(Dr.ssa Maria Tognini)



The compiler
(Maria Grazia Sbrana)

The translator
(Dr.ssa Silvia Madrigali)



UNIVERSITÀ DI PISA

**SCUOLA DI DOTTORATO
IN INGEGNERIA
"LEONARDO DA VINCI"**

Sede amministrativa
c/o DIP. ING. MECCANICA,
NUCLEARE E DELLA PROD.
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P. IVA 00288820501
Via Diocleziana 2 I - 56126 PISA
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Fax. +39-050 830665

Informazioni
Prof. Leonardo BERTINI
Tel. +39-050-830621
leonardo.bertini@ing.unipi.it

COURSE ATTENDANCE CERTIFICATE -2006

This document certifies that Mr. Colin Paul Gloster attended the following courses, which were organised by the Engineering Ph.D. School "Leonardo da Vinci" in 2006.

Denominazione corso	Docente	N° ore	Frequenza	Verifica finale
Metodi Numerici per l'Ingegneria	Gemignani	21	YES	YES
Probabilità, Statistica e Processi Stocastici	Flandoli	30	---	---
Fluidodinamica	Buresti	26	---	---
Equazioni Differenziali della Fisica Matematica	Villaggio	24	---	---
Algebra per la Meccanica	Padovani	20	---	---
Metodi di Ottimizzazione	Pappalardo	20	---	---
Meccanica dei Continui	Del Piero	28	---	Non prevista
Introduzione all'uso di Mathematica	Romani	12	---	Non prevista
Scientific English Courses: Writing and Presenting Scientific Articles in English	Wallwork	10	---	---

Pisa, 14/09/2007

The Head of the Ph.D. School
(Prof. Ing. Leonardo BERTINI)

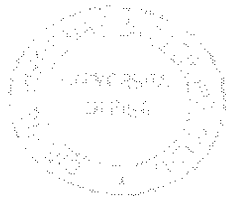


Università di Pisa
Dipartimento di Ingegneria dell'Informazione: Elettronica, Informatica, Telecomunicazioni
DOTTORATO DI RICERCA IN INGEGNERIA DELL'INFORMAZIONE

Pisa, il September 5, 2007

Mr Colin Paul Gloster
Via Tosco Romagnola 2461
56023 Titignano (PI)
Italy

This is to certify that, with reference to the series of lessons held on 20, 22, 27 March - 5, 7, 19, 21 April and 3, 4, 5 May 2006 by Dr. Adrian Wallwork about "*Writing Scientific Articles in English*" as part of the schedule for year 2006 for doctoral students at the Doctorate in Information Engineering of the University of Pisa, the student whose name appears in the address above attended the lessons held on 22, 27 March - 5, 7, 19, 21 April and 3, 4, 5 May 2006, and successfully completed the final test.



Prof. Lanfranco Lopriore
President of the Doctorate



Università di Pisa

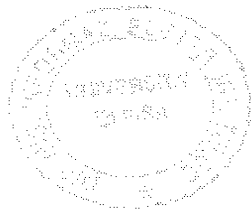
Dipartimento di Ingegneria dell'Informazione: Elettronica, Informatica, Telecomunicazioni

DOTTORATO DI RICERCA IN INGEGNERIA DELL'INFORMAZIONE

Pisa, il September 5, 2007

Mr Colin Paul Gloster
Via Tosco Romagnola 2461
56023 Titignano (PI)
Italy

This is to certify that, with reference to the series of lessons held on 3, 4 april 2006 by Dr. R. De Gaudenzi about "*New trends in the field of telecom satellite techniques for interactive and mobile broadcasting services*" as part of the schedule for year 2006 for doctoral students at the Doctorate in Information Engineering of the University of Pisa, the student whose name appears in the address above attended the lessons held on 3 e 4 april 2006, and successfully completed the final test.



Prof. Lanfranco Lopriore
President of the Doctorate

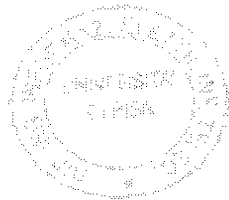


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DOTTORATO DI RICERCA IN INGEGNERIA DELL'INFORMAZIONE

Pisa, li September 5, 2007

Mr Colin Paul Gloster
Via Tosco Romagnola 2461
56023 Titignano (PI)
Italy

This is to certify that, with reference to the series of lessons held on 26, 27 and 28 april 2006 by Dr. William H. Sanders about "*Validating computer system and network trustworthiness*" as part of the schedule for year 2006 for doctoral students at the Doctorate in Information Engineering of the University of Pisa, the student whose name appears in the address above attended the lessons held on 26, 27 and 28 april 2006, and successfully completed the final test.



Prof. Lanfranco Lopriore
President of the Doctorate

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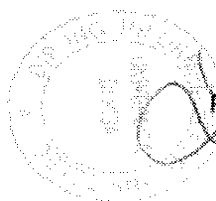


Università di Pisa
Dipartimento di Ingegneria dell'Informazione: Elettronica, Informatica, Telecomunicazioni
DOTTORATO DI RICERCA IN INGEGNERIA DELL'INFORMAZIONE

Pisa, li September 5, 2007

Mr Colin Paul Gloster
Via Tosco Romagnola 2461
56023 Titignano (PI)
Italy

This is to certify that, with reference to the series of lessons held on 19, 20, 21, 22 and 23 June 2006 by Dr. Luca Daniel about "*Introduction to model order reduction*" as part of the schedule for year 2006 for doctoral students at the Doctorate in Information Engineering of the University of Pisa, the student whose name appears in the address above attended the lessons held on 19, 20, 21, 22 and 23 June 2006, and successfully completed the final test.



Prof. Lanfranco Lopriore
President of the Doctorate

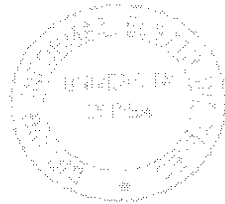


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DOTTORATO DI RICERCA IN INGEGNERIA DELL'INFORMAZIONE

Pisa, li September 5, 2007

Mr Colin Paul Gloster
Via Tosco Romagnola 2461
56023 Titignano (PI)
Italy

This is to certify that, with reference to the series of lessons held on 2, 3 and 4 april 2006 by Dr. Giovanni De Micheli about "*Design technologies for integrated circuits*" as part of the schedule for year 2006 for doctoral students at the Doctorate in Information Engineering of the University of Pisa, the student whose name appears in the address above attended the lessons held on 2, 3 and 4 april 2006, and successfully completed the final test.



Prof. Lanfranco Lopriore
President of the Doctorate

and.

DCU

IN PURSUANCE OF THE POWERS
VESTED IN IT BY STATUTE
DUBLIN CITY UNIVERSITY
HAS CONFERRED THE DEGREE OF

BACHELOR OF SCIENCE IN COMPUTER APPLICATIONS

on

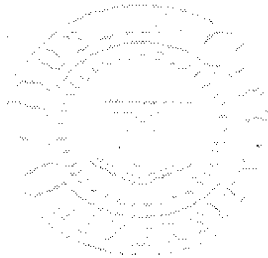
Colin Paul Gloster

DE BHUN NA gCUMHACHTAÍ
A THUGTAR DÍ LE REACHT
TÁ OLLSCOIL CHATHAIR BHAILE ÁTHA CLIATH
TAR ÉIS CÉIM

BAITSILÉIR EOLAÍOCHTA I bhFEIDHMIÚCHÁIN RÍOMHAIRÍ

A BHRONNADH AR AN DUINE THUASLUAITE

IN WITNESS WHEREOF
THE SEAL OF THE UNIVERSITY
IS IMPRESSED UPON THIS PARCHMENT



DÁ FHIANÚ SIN STAMPÁLADH
SÉALA NA hOLLSCOILE AR AN bPÁR SEO

President

[Signature]

Registrar

[Signature]

Jachtarán

Cláraitheoir

5th November, 2003

Date of Conferring
Dáta an Bhronnta



99563291

Colin Paul Gloster
21 BOURNE AVE
ASHBOURNE
CO. MEATH

Registry
Dublin City University
Dublin 9, Ireland

Telephone : +353 1 700 5565
Facsimile : +353-1-700 5504
Website: www.dcu.ie

STATEMENT OF EXAMINATION RESULTS

Colin Paul Gloster

Date of Birth: 03 July 1980

Following consideration of your performance in the recently held University Examination in Year 4 of the
BSc in Computer Applications (Comp.Sc.).

The Progression & Awards Board have recommended the results for approval by Academic Council
in the Academic Year 2002/2003. The relevant Board of Examiners has recommended as follows:

Spring Examination

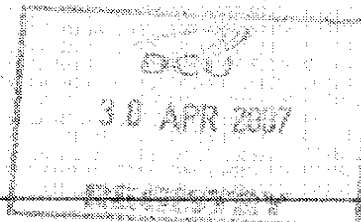
Module Code	Title of Module	Duration Code	Mark Awarded	Result Code	ECTS Grade	ECTS Credits
CA421	Software Metrics & Object Oriented Desig	S	57	P	C	5
CA423	Compiler Construction 1	S	65	P	B	5
CA427	Operations Research	S	62	P	C	5
CA431	Digital Signal Processing 1	S	65	P	B	5
CA433	Computer Graphics 1	S	94	P	A	5
CA465	Project Preparation	S	61	P	C	5

Summer Examination

CA400	Project	S	70	P	A	15
CA422	OO Models	S	64	P	B	5
CA429	Operations Research/Management Science	S	55	P	C	5
CA434	Computer Graphics 2	S	78	P	A	5

Overall result: 2ND CLASS HONOURS GRADE 1

Errors And Omissions Excluded



Signature: *Maria Slowey*
PROFESSOR MARIA SLOWEY, REGISTRAR

30 April 2007

DATE OF ISSUE

NE. This is an important document of record of your examination results which you should keep carefully. Replacement copies of this Statement of Results, which will be issued on written request only, will be supplied subject to payment of the stipulated fee. Information, extracted and summarised from the University's Academic Regulations, is given overleaf to assist in the interpretation of these results.

used



99563291
Colin Paul Gloster
21 BOURNE AVE
ASHBOURNE
CO MEATH

Registry
Dublin City University
Dublin 9, Ireland

Telephone : +353 1 700 5565
Facsimile : +353-1-700 5504
Website: www.dcu.ie

STATEMENT OF EXAMINATION RESULTS

Colin Paul Gloster

Date of Birth: 03 July 1980

Following consideration of your performance in the recently held University Examination in Year 3 of the BSc in Computer Applications (Comp.Sc.).

The Progression & Award Board have recommended the results for approval by Academic Council in the Academic Year 2006/2007. The relevant Board of Examiners has recommended as follows:

Spring Examination

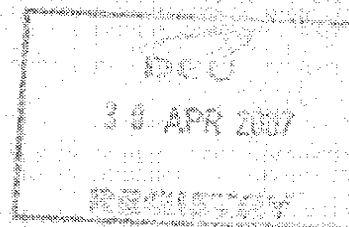
Module Code	Title of Module	Duration Code	Mark Awarded	Result Code	BCTS Grade	ECTS Credits
CA300	Introduction to Artificial Intelligence	S	52	P	D	5
CA313	Complexity	S	46	P	E	5
CA314	OO Analysis and Design	S	69	P	B	5
CA319	Comparative Programming Language	S	51	P	D	5
CA323	Real Time Embedded Systems	S	67	P	B	5
MS340	Mathematics (Numerical Analysis/Differ.)	S	50	P	D	5

Autumn Examination

CA326	Year 3 Project	S	60	P	C	20
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Overall result: PASS

Errors And Omissions Excluded



Signature: *Maria Slowey*
PROFESSOR MARIA SLOWEY, REGISTRAR

30 April 2007

DATE OF ISSUE

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61d



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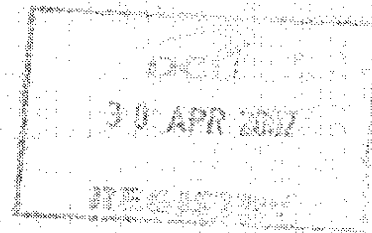
Facsimile : +353-1-700 5504

Website: www.dcu.ie

STATEMENT OF EXAMINATION RESULTS

Overall result: PASS

Errors And Omissions Excluded



Signature

Maria Slowey
PROFESSOR MARIA SLOWEY, REGISTRAR

30 April 2007

DATE OF ISSUE

NB: This is an important document of record of your examination results which you should keep carefully. Replacement copies of this Statement of Results, which will be issued on written request only, will be supplied subject to payment of the stipulated fee. Information, extracted and summarised from the University's Academic Regulations, is given overleaf to assist in the interpretation of these results.

92d



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STATEMENT OF EXAMINATION RESULTS

Colin Paul Gloster

Date of Birth: 03 July 1980

Following consideration of your performance in the recently held University Examination in Year 3 of the
BSc in Computer Applications (Comp.Sc.).

The Progression & Award Board have recommended the results for approval by Academic Council
in the Academic Year 2006/2007. The relevant Board of Examiners has recommended as follows:

Spring Examination

Module Code	Title of Module	Duration Code	Mark Awarded	Result Code	ECTS Grade	ECTS Credits
CA208	LOGIC	S	65	P	B	5
CA213	DATA STRUCTURES & ALGORITHMS	S	85	P	A	5
CA215	LANGUAGES & COMPUTABILITY	S	61	P	C	5
CA217	Introduction to Networks & Internet	S	51	P	D	5
CA219	Probability	S	19	X	F	-
CA225	Assembly Language Programming	S	40	P	E	5

Summer Examination

CA212	OO Design & Implementation	S	55	P	C	5
CA214	Systems Analysis	S	40	P	E	5
CA216	Introduction to Operating Systems	S	63	P	B	5
CA218	INTRODUCTION TO DATABASES	S	45	P	E	5
CA226	Advanced Computer Architectures	S	51	P	D	5
MS200	Linear Algebra & Vectors	S	77	P	A	5

Autumn Examination

CA219	Probability	S	70	P	A	5
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DCU
10 APR 2007
30 April 2007

Signature: *Maria Slowey*
PROFESSOR MARIA SLOWEY, REGISTRAR

DATE OF ISSUE

NB. This is an important document of record of your examination results which you should keep carefully. Replacement copies of this Statement of Results, which will be issued on written request only, will be supplied subject to payment of the stipulated fee. Information, extracted and summarised from the University's Academic Regulations, is given overleaf to assist in the interpretation of these results.

982



99563291

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Dublin 9, Ireland

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Website: www.dcu.ie

STATEMENT OF EXAMINATION RESULTS

Colin Paul Gloster

Date of Birth: 03 July 1980

Following consideration of your performance in the recently held University Examination in Year 1 of the

BSc in Computer Applications.

The Progression & Award Board have recommended the results for approval by Academic Council in the Academic Year 1999/2000. The relevant Board of Examiners has recommended as follows:

Spring Examination

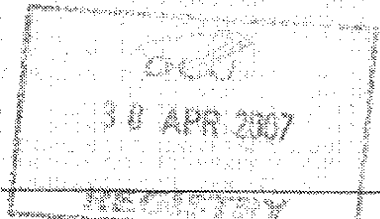
Module Code	Title of Module	Duration Code	Mark Awarded	Result Code	ECTS Grade	ECTS Credits
AC106	ACCOUNTING FOR NON-BUSINESS STUDENTS	S	52	P	D	5
CA103	COMPUTER ARCHITECTURE 1	S	92	P	A	5
CA165	COMPUTER PROGRAMMING 1	S	98	P	A	10
PS125	PHYSICS FOR COMPUTER APPLICATIONS	S	73	P	A	5

Summer Examination

CA104	COMPUTER ARCHITECTURE 2	S	69	P	B	5
CA166	COMPUTER PROGRAMMING 2	S	70	P	A	10
EE190	BASIC ELECTRONICS	S	68	P	B	5
MS120	MATHEMATICS 1	S	79	P	A	10
MT105	BUSINESS GAME FOR STUDENTS OF COMP. & EN	S	70	P	A	5

Overall result: 1ST CLASS HONOURS

Errors And Omissions Excluded



Signature: Maria Slowey
PROFESSOR MARIA SLOWEY, REGISTRAR

30 April 2007
DATE OF ISSUE

NB. This is an important document of record of your examination results which you should keep carefully. Replacement copies of this Statement of Results, which will be issued on written request only, will be supplied subject to payment of the stipulated fee. Information, extracted and summarised from the University's Academic Regulations, is given overleaf to assist in the interpretation of these results.

Interpretation of Results

The underlisted notes have been extracted and summarised from the University's Academic Regulations which should be consulted if precise and detailed information is required. This information is provided to assist in the interpretation of the results provided overleaf on the statement of results.

1. Interpretation of Data

The results for each semester will indicate the code, title and duration of each module, together with the percentage mark, ECTS Grade awarded and the number of DCU/ECTS credits earned.

Duration Code:	S	=	Single Semester	Y	=	Full Academic Year
Result Code:	A	=	Absent	I	=	Certified illness
	AO	=	Registered for attendance only	L	=	Laboratory Pass only
	C	=	Pass by Compensation	P	=	Pass
	D	=	Deferred result	T	=	Theory Pass only
	E	=	Exemption	W	=	Failed a Coursework element
	F	=	Fail	X	=	Failed an Examination element
	FN	=	Fail (No Autumn Repeat)			

ECTS Grade:	A	Excellent:	outstanding performance with only minor errors
	B	Very Good:	above average performance but with some errors
	C	Good:	generally sound work with some notable errors
	D	Satisfactory:	fair but with significant shortcomings
	E	Sufficient:	minimum criteria met
	FX	Fail:	some more work required
	F	Fail:	considerable further work required

DCU/ECTS Credits:

A Student attending full time at the University will normally be expected to complete each academic year the equivalent of 12 modules, each module with a value of 5 ECTS (European Credit Transfer System) credits. ECTS credits describe the student workload required per module. A student would thus accumulate 60 ECTS credits per year. A 3-year degree programme would therefore have a total ECTS credit value of 180 and, similarly, a 4-year degree programme would have a value of 240 ECTS credits. In exceptional circumstances students may be permitted to earn more than 60 credits in any given academic year.

2. Assessment Methodology

In general, student performance is determined at the conclusion of each academic year. In taught programmes, this is based on a combination of attainment in end-of-semester examinations (both semesters) and continuous/phased assessment of academic exercises carried out throughout the academic year. Research programmes of study are assessed on the basis of a submitted thesis and oral examination, although in the case of Masters degrees the latter may be waived at the discretion of the examiners.

3. Progression

Progression to the subsequent examination stage of a degree programme is dependent upon the student meeting all academic and other requirements as laid down in the University's Academic Regulations for the Award of Degrees. Honours level classifications are indicated for interim stages of programmes.

4. Pass Mark

The minimum mark required for a pass in an examination subject is 40% unless stated otherwise. A candidate who fails to attain the required pass standard in all examination subjects taken at a single sitting may, at the discretion of the Board of Examiners, be allowed to pass the examination as a whole by compensation, subject to the approval of Academic Council.

5. Exemptions

In general, all examination subjects passed by a candidate in a particular year of study should have such passes held in perpetuity unless removed as a consequence of a subsequent disciplinary decision approved by Academic Council. However, students should check their Faculty Booklet for any exceptions to this rule.

6. Award Classifications: Primary Degrees

The award of a Bachelor Degree is made at the levels given below. Normally the level of award is derived from the final year performance unless where stated otherwise in Academic Regulations.

Level of Award	% Average Mark	Level of Award	% Average Mark
First Class Honours	Not less than 70%	Third Class Honours	Not less than 50%
Second Class Honours-Grade 1	Not less than 63%	Pass	Not less than 40%
Second Class Honours-Grade 2	Not less than 55%		

Please note that in certain Faculties, Third Class Honours degrees are not awarded. Students should check their Faculty Booklet for details.

7. Award Classifications: Other Awards

- 7.1. A Certificate, Diploma, Graduate Certificate, or Graduate Diploma (in most cases) may be awarded with the classification of distinction, where the percentage average mark is not less than 70%, or credit, where the percentage average mark is not less than 60%. In some cases the minimum pass mark for certain degree programmes is 50%. Students should check their Faculty Booklet for Award Classifications.
- 7.2. A Master's Degree obtained through coursework and dissertation may be awarded with first class honours where the percentage average mark is not less than 70%, or with second class honours where the percentage average mark is not less than 60%. The minimum pass mark for certain Masters degrees, and in some cases, Graduate Diploma programmes is 50%. Students should check their Faculty Booklet for Award Classifications.
- 7.3. A Master's Degree by research is of honours standard and is awarded without classification.
- 7.4. The degree of Doctor of Philosophy, Ph.D. is awarded without classification.

see



Dublin City University
Ollscoil Chathair Bhaile Átha Cliath

School of Computing
Dublin 9, Ireland

Dr. W.G. Tuohy
School of Computing,
Dublin City University,
Glasnevin,
Dublin,
Ireland

Tel: 353-1-7008728
Email: tuohy@computing.dcu.ie

Subject: Reference for Mr. Colin Gloster, Computer Applications (Computer Science) Graduate 2003

To Whom It May Concern:

On 2003, I was Mr. Gloster's staff supervisor for his final year project. In our Computer Applications degree at DCU, the project is a major element of a student's final year's work. It is possible for students to do group projects but Mr. Gloster, like the majority of the class, did his project alone. While working in a group gives an opportunity to improve teamwork and communication skills it would have been hard for Mr. Gloster to find a partner who shared an interest in his chosen topic.

This supervision is the main basis of my knowledge of Mr. Gloster, not having previously taught him in other modules. I did assess his third year project, which reflected his interest in the Ada programming language. My memory of that assessment was that he had clearly done a good deal of work but that he should have made a greater effort to present it, particularly to put it in context for a non-specialist audience. I understand that his knowledge of Ada is self acquired, as we do not teach it in the school.

His final year project was entitled "On-board data processing for a principal investigator" and consisted of developing a subset of the software that would be required for a satellite borne scientific instrument. His idea, a sensible one, was to take part of the specification of an actual instrument as his starting point. His intention was to implement both some low-level (operating system) functionality (including checks on

Page 1 of 2

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Website www.computing.dcu.ie

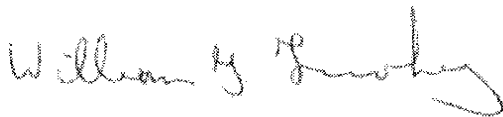
5108

memory), and some higher level functionality (including filtering for data smoothing and compression). He also needed to develop some basic user interface software as a means of presenting the work. In general, he carried out the project very well, investing a great deal of time, and achieved I believe a mark of 70% for it.

Mr. Gloster was quite organised in his conduct of his project - we had a weekly meeting, at his request, where he reported progress and what he planned to do next. He showed initiative in making external contacts to get needed information; in particular, he made contact with Imperial College to obtain data on the data filtering mentioned above. On occasion, I found that Mr. Gloster needed to be encouraged to document and present his ideas clearly, without superfluous and irrelevant material.

Mr. Gloster is clearly very interested in the development of on-board software for spacecraft or scientific instrument control and support, where Ada is commonly used. I believe he actively follows web discussions and interest groups on aspects of Ada. In general, I found that Mr. Gloster was quite knowledgeable about the technologies and issues that are relevant to this kind of software development.

In conclusion, Mr. Gloster has a very keen, long-standing interest in on-board software development and would, I believe, be highly motivated in pursuing postgraduate research in this area. Moreover, his examination results demonstrate that he has the academic potential to be successful in such research.



W.G. Tuohey, Ph.D.



UNIVERSITÀ DI PISA
DIPARTIMENTO DI MATEMATICA "L. TONELLI"

Luca Gemignani
Dipartimento di Matematica
Università di Pisa
Largo B. Pontecorvo 5
56127 Pisa - Italy.
url: <http://www.dm.unipi.it/~gemignan>
e-mail: gemignan@dm.unipi.it

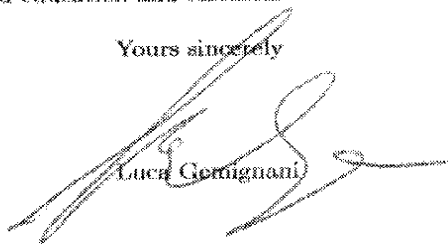
September 11, 2007

To whom it may concern,

I have known Colin Paul Gloster since February 2006 as a graduate student in my course on Numerical Methods for Engineers at the Engineering PhD School "Leonardo da Vinci" of the University of Pisa.

As his professor, I have had the opportunity to evaluate his capacity for theoretical and applicative studies. In my opinion the applicant is a student with various intellectual interests, a proper preparation in computational mathematics and the potential to succeed in advanced education and research.

Yours sincerely



Luca Gemignani

School of Computing,
Dublin City University,
Glasnevin,
Dublin 9

September 16, 2008

Re: Colin Paul Gloster

Dear Sir/Madam

With regard to the above-named student's application for postgraduate research, I have acted as a lecturer and project supervisor for him a number of years ago, and have found him to be a solid if not exceptional student. Colin has his own independent view on how things should be done, which can be a good quality in a postgraduate researcher, but this may need to be channeled in the appropriate direction.

Colin is a hard worker, and has a healthy enthusiastic attitude towards his work. He would therefore make a positive addition to a postgraduate research team.

Yours sincerely

Dr G W Hamilton (Senior Lecturer)

542

Dados para a Candidatura: **SFRH/BD/46372/2008** (Bolsa de Doutoramento)

Nome do Candidato: Nicholas Collin Paul Gloucester

Domínio Científico: Física
([Lista de resultados da avaliação](#)) ([Lista final de resultados](#)) ([Classificação Unidades 2007](#))

Avaliador:

Ficha de Avaliação (Preenchida on-line por Física):

1. As Bolsas de Doutoramento destinam-se a licenciados, mestres ou detentores de outro grau académico que sejam aceites para Doutoramento em universidades portuguesas ou estrangeiras;
2. A duração deste tipo de bolsa é, em princípio anual, prorrogável até totalizar quatro anos, não podendo ser concedida por períodos inferiores a três meses consecutivos.

Critérios	Factor de Ponderação	Classificação (min=1;max=5)	Observações
Mérito do Candidato	5	2	Tendo em conta a classificação no BsC (4 anos) que considerámos equivalente a 12 valores e a classificação no mestrado (1 ano).
Mérito do programa de trabalhos a desenvolver	3	4	O projecto em que se insere é um dos mais importantes para a ESA no desenvolvimento de detectores (direccionais) de raios gama. A sua participação no desenvolvimento dos sistemas de controlo é importantíssima. O Centro de Instrumentação da Univ. de Coimbra é membro do consórcio GRI.
Mérito das condições de acolhimento (considerar tanto a Instituição como o Responsável pelas actividades)	2	4	Instituição de Acolhimento com "Very Good". Supervisores com bom currículo.
Classificação Final.		3	

(22-06-2011 12:47:36)

Subject: Concurso 2008 - 2º ciclo

Date: terça-feira, 9 de dezembro de 2008 13:06

From: ldbolsas <id.bolsas@fct.mctes.pt>

To: <Colin_Paul_Gloster@ACM.org>

Exmo(a) Senhor(a)

No âmbito do concurso de 2008, as candidaturas a bolsas de investigação em C&T foram analisadas por painéis de avaliação, constituídos por peritos das respectivas áreas científicas, que classificaram os méritos do candidato, do programa de trabalhos a desenvolver e das condições de acolhimento proporcionadas pela respectiva unidade de investigação.

No caso da sua candidatura, a pontuação atribuída pelo painel de avaliação, que teve por base os elementos apresentados no seu processo, conjugada com a definição da linha de corte, implica a recusa da bolsa.

Dando cumprimento ao estabelecido no Código do Procedimento Administrativo, nomeadamente nos seus Artigos 100º e 101º, poderá, se assim o entender, formular no prazo de 10 dias úteis as observações que eventualmente considere convenientes, para que possa ser tomada pela FCT uma decisão final.

Deverá para tal utilizar unicamente a ligação disponível na página onde poderá aceder à transcrição da sua ficha de avaliação, no endereço www.fct.mctes.pt/fctsig utilizando os códigos de acesso que lhe foram atribuídos pela FCT quando se candidatou.

Com os melhores cumprimentos

Francisco Sepúlveda Teixeira

Vice-Presidente da FCT

Dear Sir or Madam

Concerning your application, we regret to inform that the score awarded by the evaluation panel, based on the elements you submitted, together with the definition of the minimal score needed, implies that the grant will not be awarded. The evaluation process took into consideration the following criteria: merits of the candidate, quality of the working plan and excellence of the hosting institution.

Following this evaluation result, according to the Portuguese law, you can, if you wish, send us your comments, within the next ten working days. Then, you will be informed of the FCT final decision. These comments must be submitted online at the same web site where your evaluation report will be available, www.fct.mctes.pt/fctsig using the credentials assigned to you by FCT.

SGA

Yours sincerely,

Francisco Sepúlveda Teixeira

Vice-President of FCT

Dados para a Candidatura: **SFRH/BD/46372/2008** (Bolsa de Doutoramento)
Nome do Candidato: Nicholas Collin Paul Gloucester
Domínio Científico: Física ([Lista de resultados da avaliação](#)) ([Lista final de resultados](#))
Audiência prévia: Indeferido | Deferido | (Gravado a: 07-01-2009 19:20:00)

Carta comentário no âmbito do período de audiência prévia: [lacrada a 16-12-2008 21:02:00]

My first foreign degree was wrongly judged to be equivalent to a Portuguese value of 12/20. My first foreign degree is at 67.7% in the scale of Dublin City University, which would be rectilinearly converted to $13.54/20 = 67.7\% \times 20 / 20$. That rectilinear conversion would result in more than 12/20, but still underestimates the equivalent Portuguese value because the minimum passable Portuguese value is 10/20 but the minimum passable Irish value is 40% instead of the Portuguese 50%. Therefore, a less unfair conversion is a Portuguese value of $((67.7\% - 40\%) / 0.6 \times 10 + 10) / 20 = 14.6 / 20$. Dublin City University described its scale on the last page of [primary_degree_of_Mister_Gloster.pdf](#) which was part of the application.

According to the table of Page 31 of the European Commission document "Sistema Europeu de Transferência de Créditos - Manual do Utilizador do ECTS [European Credit Transfer and accumulation System]", available from for example

www.ul.pt/pls/portal/docs/1/49191.PDF

and

http://www.fam.ulusiada.pt/downloads/bolonha/ects_manual.pdf

and

<http://www.dqb.fc.ul.pt/bolonha/ECTS.pdf>

and

http://web.archive.org/web/20040827163202/http://www.uc.pt/ge3s/guia/docs/ects_manual.pdf

, my B.Sc. mark "2ND CLASS HONOURS GRADE 1" (67.7%) which corresponds to an ECTS B (check the B's on my transcripts for modules in which I had been awarded 63% to 69% and the A's for modules in which I had been awarded 70% and higher) correspond to "Muito Bom" which should be converted to a mark between 16/20 and 17/20 in the Portuguese system according to the article 17 of the Decreto-Lei n.º 42/2005, de 22 de Fevereiro (Princípios reguladores de instrumentos para a criação do espaço europeu de ensino superior; <http://www.portugal.gov.pt/Portal/Print.aspx?guid={8B6F1381-E8A8-4260-8C21-2CFC522720EE}>).

So, according to <http://alfa.fct.mctes.pt/apoios/bolsas/concursos/guiao2008.pdf>

I should be evaluated to be worthy of a merit of at least 4/5 instead of the 2/5 which you misjudged me to have earned.

532.

Subject: Resultado Final do Concurso de 2008 / FCT final decision

Date: sexta-feira, 6 de fevereiro de 2009 16:32

From: ldbolsas <id.bolsas@fct.mctes.pt>

To: <Colin_Paul_Gloster@ACM.org>

Exmo(a) Senhor(a)

No âmbito do Concurso de 2008 e após conclusão do processo de análise dos comentários enviados pelos candidatos que entenderam fazê-los, em sede de Audiência Prévia, conforme estabelecido no Código de Procedimento Administrativo, a FCT manteve o projecto de decisão de recusa da bolsa a que se candidatou, pelo que esta decisão passou a definitiva.

O acesso à lista de resultados poderá ser feito através do endereço www.fct.mctes.pt/fctsig utilizando os códigos de acesso que lhe foram atribuídos pela FCT quando se candidatou.

Embora a sua candidatura não se tenha qualificado neste concurso para aprovação, poderá sempre voltar a candidatar-se, por submissão electrónica, no âmbito de futuros concursos que venham a ser abertos para o mesmo tipo de bolsa.

Com os melhores cumprimentos

Francisco Sepúlveda Teixeira
Vice-Presidente da FCT

Dear Sir or Madam

We regret to inform you that your fellowship application submitted to FCT was not evaluated positively. This is the FCT final decision.

The results are available on line at the web site www.fct.mctes.pt/fctsig using the credentials assigned to you by FCT.

Yours sincerely,

Francisco Sepúlveda Teixeira
Vice-President of FCT



Subject: Reavaliação científica dos pedidos de recurso / Scientific evaluation

Date: segunda-feira, 20 de julho de 2009 13:27

From: -- -- <id.bolsas@fct.mctes.pt>

To: <Colin_Paul_Gloster@ACM.org>

Exmo/a Senhor/a

Após conclusão do processo de reavaliação do Recurso submetido na área científica da sua escolha, vimos informá-lo/a de que a nova classificação obtida continua abaixo do limite mínimo estabelecido para aquela área científica e para o tipo de bolsa em causa, ou seja, continua abaixo da linha de corte.

Assim, a anterior decisão de recusa da bolsa a que se candidatou mantém-se.

Poderá aceder à transcrição da sua ficha de avaliação do Recurso, no endereço <https://www.fct.mctes.pt/fctsig> utilizando os códigos de acesso que lhe foram atribuídos pela FCT quando se candidatou.

Embora a sua candidatura não se tenha qualificado neste concurso para aprovação, poderá sempre voltar a candidatar-se, por submissão electrónica, no âmbito de futuros concursos que venham a ser abertos para o mesmo tipo de bolsa.

Com os melhores cumprimentos

Francisco Sepúlveda Teixeira

Vogal do Conselho Directivo da FCT

Dear Sir or Madam

Concerning your application, we regret to inform you that the score awarded by the new evaluation panel, based on the elements you submitted, together with the definition of the minimal score needed for the award, implies that your grant will not be awarded. Your evaluation report will be available on line at the web site <https://www.fct.mctes.pt/fctsig> using the passwords assigned to you by FCT.

Sincerely Yours

Francisco Sepúlveda Teixeira



Vice-President of FCT

612.

Dados para a Candidatura: SFRH/BD/46372/2008 (Bolsa de Doutoramento)
Nome do Candidato: Nicholas Collin Paul Gloucester
Domínio Científico: Física
Avaliador: Física

Ficha de Avaliação:

1. As Bolsas de Doutoramento destinam-se a licenciados, mestres ou detentores de outro grau académico que sejam aceites para Doutoramento em universidades portuguesas ou estrangeiras;
2. A duração deste tipo de bolsa é, em princípio anual, prorrogável até totalizar quatro anos, não podendo ser concedida por períodos inferiores a três meses consecutivos.

Critérios	Factor de Ponderação	Classificação (min=1;max=5)	Observações
Mérito do Candidato	5	2	Não tendo recebido qualquer indicação sobre critérios de equivalência, não devo alterar a equivalência utilizada pelos avaliadores que, aliás, me parece correcta.
Mérito do programa de trabalhos a desenvolver	3	4	Na classificação atribuída é reconhecida a importância do projecto em causa. Daí que mantenha a classificação.
Mérito das condições de acolhimento (considerar tanto a Instituição como o Responsável pelas actividades)	2	4	Tendo em conta a classificação da instituição e o CV dos orientadores, concordo com a classificação atribuída.
Classificação Final.		3	

(22-06-2011 12:51:44)

Scd.

Dados para a Candidatura: SFRH/BD/46372/2008 (Bolsa de Doutoramento)
Nome do Candidato: Nicholas Collin Paul Gloucester
Domínio Científico: Física ([Lista de resultados da avaliação](#)) ([Lista final de resultados](#))
Audiência prévia: Indeferido | Deferido | **GRAVAR** (Gravado a: 07-01-2009 19:20:00)

Carta para apresentação de recurso:

I submitted comments timestamped "16-12-2008 21:02:00" via the website, but I have not received an answer. At 10:50a.m. on February 23rd, 2009 I telephoned FCT on 213 924310 and I was advised that I should have received a response by email.

In addition to the comments on the website, one of my co-supervisors emailed FCT concerning this, as have I, and no response to any of these emails has been received. If none of this appeal and the earlier emails and the earlier comments shall be answered, then I shall make a formal complaint.

Please find below a copy of the comments which I had submitted via the website, and a copy of the two emails.

I checked again today, and the website wrongly contains the assertion

"Tendo em conta a classificação no BsC (4 anos) que considerámos equivalente a 12 valores". Please rectify this. On what legal basis did you perform this conversion?

Rui Silva emailed to bolsas@FCT.MCTES.Pt with subject "Recurso SFRH/BD/46372/2008" timestamped Wed, 11 Feb 2009 16:40:51 +0000 (WET):

"Exmos. senhores,

Na passada sexta o Mestre Colin Paul Gloster recebeu um email informando-o de que o recurso referente ao pedido de bolsa SFRH/BD/46372/2008, do qual sou orientador responsável, foi rejeitado. No entanto tal como foi escrito no pedido de recurso a equivalência da sua nota de licenciatura interpretada pela Fundação para a Ciência e a Tecnologia não respeita os acordos europeus estabelecidos nesta matéria, e que Portugal se comprometeu respeitar.

Se o motivo da rejeição do recurso do Mestre Colin Paul Gloster se deve a insuficiente classificação (<4.0) após a alteração da sua média de licenciatura, gostaríamos de saber qual a nova média que lhe foi atribuída. Caso não tenha sido alterada, deveremos proceder a uma reclamação, dado que os acordos europeus nesta matéria não estão a ser respeitados.

Abaixo segue a cópia do texto do recurso.

Os meus sinceros cumprimentos,

63d.

Rui Silva"

Colin Paul Gloster emailed to info.bolsas@FCT.MCTES.Pt with timestamp

Thu, 5 Feb 2009 18:39:41 +0000 (UTC):

"Dear Sir/Madam,

I locked the comments reproduced below in December 2008.

[...]

Yours sincerely,

Colin Paul Gloster

My first foreign degree was wrongly judged to be equivalent to a Portuguese value of 12/20. My first foreign degree is at 67.7% in the scale of Dublin City University, which would be rectilinearly converted to $13.54/20 = 67.7\% \times 20 / 20$. That rectilinear conversion would result in more than 12/20, but still underestimates the equivalent Portuguese value because the minimum passable Portuguese value is 10/20 but the minimum passable Irish value is 40% instead of the Portuguese 50%. Therefore, a less unfair conversion is a Portuguese value of $((67.7\% - 40\%) / 0.6 \times 10 + 10) / 20 = 14.6 / 20$. Dublin City University described its scale on the last page of primary_degree_of_Mister_Gloster.pdf which was part of the application.

According to the table of Page 31 of the European Commission document "Sistema Europeu de Transferência de Créditos - Manual do Utilizador do ECTS [European Credit Transfer and accumulation System]", available from for example www.ul.pt/pls/portal/docs/1/49191.PDF

and

http://www.fam.ulusiada.pt/downloads/bolonha/ects_manual.pdf

and

<http://www.dqb.fc.ul.pt/bolonha/ECTS.pdf>

and

http://web.archive.org/web/20040827163202/http://www.uc.pt/ge3s/guia/docs/ects_manual.pdf

, my B.Sc. mark "2ND CLASS HONOURS GRADE 1" (67.7%) which corresponds to an ECTS

B (check the B's on my transcripts for modules in which I had been awarded 63%

to 69% and the A's for modules in which I had been awarded 70% and higher)

correspond to "Muito Bom" which should be converted to a mark between 16/20 and

17/20 in the Portuguese system according to the article 17 of the Decreto-Lei

n.º 42/2005, de 22 de Fevereiro (Princípios reguladores de instrumentos para a

criação do espaço europeu de ensino superior;

<http://www.portugal.gov.pt/Portal/Print.aspx?guid={8B6F1381-E8A8-4260-8C21-2CFC522720EE}>

).

So, according to <http://alfa.fct.mctes.pt/apoios/bolsas/concursos/guiao2008.pdf>

I should be evaluated to be worthy of a merit of at least 4/5 instead of the 2/5

which you misjudged me to have earned."

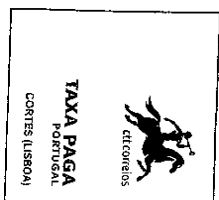
64d.

65d.



Indagação para a Ciência e a Tecnologia, I.P.
INSTITUTO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

LOS I, 126
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Trabalho Apresentado e Tercio de Gabinete

Av. Ferreira Borges 221-3º