



Overview

1. Personal data

Full Name

Luis Manuel Guerra Silva Rosa

Name under which you publish

Luis Guerra Rosa (LG Rosa)

Fiscal ID number

113696124

ID document

2322891

Birth date

12-06-1954

National of

Portugal

Gender

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Work address

Instituto Superior Técnico
Department of Mechanical Engineering (Área Científica de Projecto Mecânico e Materiais Estruturais)
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2. Academic degrees

Year: 1986

Degree: DOUTORAMENTO

Final grade: Aprovado com Distinção e Louvor

Degree granting institution Universidade Técnica de Lisboa

School/College/Campus Instituto Superior Técnico

Thesis title Fadiga de Aços-Carbono (Fatigue of Carbon Steels)

Supervisor: Carlos A. G. de Moura Branco

Co-supervisor: -----

Scientific area Mecânica da Fractura

Program title Doutoramento em Engenharia Mecânica

Year: 2004

Degree: AGREGAÇÃO

Final grade: Aprovado

Degree granting institution Universidade Técnica de Lisboa

School/College/Campus Instituto Superior Técnico

Thesis title Caracterização da resistência mecânica de multifilamentos contínuos usados em compósitos cerâmicos e carbono-carbono

Scientific area Engenharia de Materiais

Program title Agregação em Engenharia de Materiais

Year: 1977

Degree: LICENCIATURA

Final grade: Média de 17 valores (17 over 20).

Degree granting institution Universidade Técnica de Lisboa

School/College/Campus Instituto Superior Técnico

Scientific area Engenharia Metalúrgica

Number of curricular years 5

Program title Licenciatura em Engenharia Metalúrgica

3. Previous activity and current status

Período	Cargo, categoria ou actividade	Instituição
04-2-2004 a	Associate Professor (with Aggregation)	Instituto Superior Técnico
01-3-1986 a 28-2-1988	Assistant Professor at the Department of Mechanical Engineering	Instituto Superior Técnico
01-12-1993 a 30-11-1995	Director of Materials Department	INETI - National Institute of Industrial Engineering and Technology
01-7-1998 a 01-7-2000	Head of Materials Engineering Department	Instituto Superior Técnico
01-7-2002 a 01-7-2007	Coordinator of UME (Structural Materials Unit)	ICEMS - Institute of Materials and Surfaces Science and Engineering (Lisbon)
01-7-2004 a 01-7-2008	Head of Materials Engineering Department	Instituto Superior Técnico

4. Area of scientific activity

L. Guerra Rosa started his research and teaching career at the Instituto Superior Técnico in 1977, after his graduation in metallurgical engineering. In 1986, Rosa obtained the Ph.D. degree in mechanical engineering with a thesis on fatigue crack nucleation and propagation in steels, using fracture-mechanics concepts. In 1988, he created his own research group, changed slightly his research topics, and focused on ceramics and composite materials, including petrous materials, their characterization, and processing. Since then and taking advantage of his earlier experience, Rosa has been devoting his time to problems involving structural and technological characterization of materials at different stages of their elaboration, to understand their behavior, to compare their properties to references and specifications, and to evaluate their performances in condition simulating applications.

URLs for L Guerra Rosa:

- in ResearchGate: www.researchgate.net/profile/Luis_Rosa2
- in ORCID: <http://orcid.org/0000-0003-4730-3765>
- Currículo Lattes: <http://lattes.cnpq.br/9451550144301905>
- in Google Scholar: <https://scholar.google.pt/citations?user=TIRjPSoAAAAJ&hl=en&citsig=AMstHGQqNTnS7WTKds63GkkiwmqtwKTEsQ>
- in ResearcherID: www.researcherid.com/rid/F-2513-2010
- in Scopus: www.scopus.com/authid/detail.url?authorId=7006098637
- in Mendeley: www.mendeley.com/profiles/luis-guerra-rosa/
- in Sotis: <https://sotis.tecnico.ulisboa.pt/researcher/ist11630>

During the last 10 years, he has been quite active in two major research lines:

- 1) MATERIALS PROCESSING USING SOLAR FURNACES
- 2) ORNAMENTAL AND ENGINEERED STONES (CHARACTERIZATION AND PROCESSING)

The links and joint projects with foreign groups reached a very good level of collaboration, with publications and research contracts showing the degree of interdisciplinarity.

5. Present research interest

Domain of specialization

Present research topics cover:

- Extending horizon of materials processing with solar energy*
- Ornamental stones (natural ceramics) and engineered stones*
- Structural and technological characterization of technical ceramics and ceramic matrix composites. Research to support the development of standards for characterization methods for ceramic (SiC, Al₂O₃) and carbon fibres used to reinforce ceramic matrix and carbon-carbon composites.*

In the past, the research work of L. Guerra Rosa has also included:

- fracture & fatigue of structural steels and aluminium alloys;
- multilaminar composites made of thin sheets of mild steel bonded by a metallic matrix (zinc or lead/tin) or by a polymeric adhesive. These new materials show increased impact and fatigue resistance when compared with monolithic steel plate, and are especially suitable for high impact resistance applications.

Current research interests

* Materials processing using solar furnaces: high-temperature processes; tests using different heating and cooling cycles; comparison between solar-sintered ceramic bodies and those produced in conventional furnaces; carbide synthesis of d-group transition metals and kinetic aspects of reaction under the solar spectral radiation. User of Plataforma Solar de Almería-CIEMAT (Spain) and PROMES-CNRS (France). Member of STAGE-STE ("Scientific and Technological Alliance for Guaranteeing the European Excellence in Concentrating Solar Thermal Energy") <http://www.stage-ste.eu>

* Ornamental and engineered stones; rock fracture mechanics and stone cutting technologies. Microstructure and mechanical properties, dynamic test methodologies for assessing the elastic constants; characterisation of new diamond tools; and study of new processing technologies, including polishing. Member of OSNET and partner in several research projects.

Other professional interests/activities

* Research to support the development of standards for characterization methods for ceramic (SiC, Al₂O₃) and carbon fibres used to reinforce ceramic matrix and carbon-carbon composites. Validation of mechanical test procedures and assessment of factors that affect the measurements, namely of tensile test methods for characterising reinforcements (multifilament tows consisting of small-diameter SiC, Al₂O₃ and carbon fibres) and test methods to determine the fiber/matrix interfacial frictional shear stress (using minicomposites); evaluation of damage in composites through cyclic tensile tests. Development of statistical models for the distribution of strength data. Member of CEN / TC 184 / SC 1 "Advanced technical ceramics - Ceramics composites" experts group, since 1998.

6. Experience as scientific adviser

- Supervisor of 4 concluded Doctor's Theses:

D1) "A Study on Mechanical Behaviour of Three Polymer Matrix Composites Incorporating Petreous Components", presented by João Pedro Lam dos Santos (approved in July 1, 2013), UTL/IST.

D2) "Stone Materials and Cladding Fixing Systems – A Physical-Mechanical Behaviour Study", presented by Vera Lúcia Cordeiro Pires (approved in April 8, 2013), UTL/IST.

D3) "Caracterização da resistência à fractura e fadiga de materiais cerâmicos estruturais" (Characterization of Fracture and Fatigue Performance of Structural Ceramics) presented by José Jorge Lopes da Cruz Fernandes (approved in November 1994), UTL/IST.

D4) "Propriedades Mecânicas a Alta Temperatura de um Nitreto de Silício Monolítico Pre-Exposto a um Ambiente Sulfidizante" (High temperature mechanical properties of a monolithic silicon nitride pre-exposed to a sulphidizing environment) presented by Carlos Saraiva Martins (approved in June 1994), UTL/IST.

- Supervisor of 7 concluded Master's Theses:

M1) "Preliminary Structural Analysis of a Thermal Deflector of Carbon Fiber and Cork Sandwich for Space Applications" presented by Tiago André Almeida Tomás Ferreira de Barros (approved in 24 November 2014) UTL/IST.

M2) "Critérios para a Identificação dos Ensaios e Equipamentos mais Utilizados na Indústria de Construção" (Criteria for selecting tests and equipment mostly applied in the characterization of building materials) presented by Vitor Alexandre Castelo Gouveia Nunes Costa (approved in 3 December 2008) UTL/IST.

M3) "Análise de ferramentas diamantadas utilizadas em corte e desbaste de mármore e granitos" (Analysis of diamond tools used in sawing and grinding of marbles and granites) presented by Carlos Alberto Gancho Anjinho (approved in 3 May 2004) UTL/IST.

M4) "Efeito da Integridade Superficial no Comportamento Mecânico do Aço AISI L6 Maquinado por Electroerosão" (Effect of surface integrity on the mechanical behaviour of AISI L6 steel machined by electro-discharge) presented by Mário Jorge Santos Araújo de Melo (approved in 1 October 1999) UTL/IST.

M5) "Influência das Condições de Anodização na Resistência à Fadiga da Liga de Alumínio 2024-T3" (Influence of anodising conditions on the fatigue strength of 2024-T3 aluminium alloy) presented by Tiago Filipe M. F. Duarte David (approved in 7 September 1999) UTL/IST.

M6) "Caracterização Mecânica e Microestrutural de Corpos densos de Carboneto de Silício obtidos por Sinterização Reactiva" (Mechanical and microstructural characterisation of silicon carbide dense bodies obtained by reaction sintering) presented by Isabel Maria Alexandrino Duarte (approved in 18 May 1998) UTL/IST.

M7) "Mecanismos de Fractura e Fadiga de Materiais Compósitos Laminados de Matriz Metálica" (Fracture and fatigue mechanisms in metal-matrix multilayer composites) presented by Maria Alexandra Sousa Rodrigues Pereira da Costa (approved in 12 April 1996)

In the period from 1992 till 2006, he supervised 31 "Trabalhos Finais de Curso" of Licenciaturas (pre-Bolonha).

- Additional experience as scientific adviser includes collaboration as Evaluator for institutions like: FCT, ANI & AdI-Agência de Inovação, ECSC Research Programm "Steel", European Science Foundation, UEFISCDI (Roménia), and CONICYT (Chile).

Reviewer of papers submitted to the following periodicals:

- Ciência & Tecnologia dos Materiais www.sciencedirect.com/science/journal/08708312/25
- Composite Interfaces www.tandfonline.com/loi/tcoi20
- Construction and Building Materials <http://ees.elsevier.com/conbuildmat/>
- Diamond and Related Materials <https://www.journals.elsevier.com/diamond-and-related-materials>
- Fatigue & Fracture of Engineering Materials & Structures [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1460-2695](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1460-2695)
- Indian Journal of Engineering and Materials Sciences <http://www.niscair.res.in/ScienceCommunication/ResearchJournals/rejour/ijems/ijems0.asp>
- International Journal of Fatigue <https://www.journals.elsevier.com/international-journal-of-fatigue>
- International Journal of Nuclear Energy Science and Technology <http://www.inderscience.com/jhome.php?jcode=ijnest>
- International Journal of Refractory Metals and Hard Materials <http://ees.elsevier.com/ijrmhm/>
- Journal of Materials Processing Technology <http://ees.elsevier.com/protec/>
- Journal of Solar Energy Engineering <http://solarenergyengineering.asmedigitalcollection.asme.org/journal.aspx>
- Journal of the American Ceramic Society [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1551-2916](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1551-2916)
- Key Engineering Materials www.ttp.net/1013-9826.html
- Materials and Design <http://ees.elsevier.com/jmad/>
- Materials Chemistry and Physics <http://ees.elsevier.com/matchemphys/>
- Materials Research http://www.scielo.br/scielo.php?script=sci_issues&pid=1516-1439&lng=en&nrm=iso
- Materials Science Forum www.ttp.net/0255-5476.html
- Mechanics of Advanced Materials and Structures www.tandf.co.uk/journals/boards/umcm-edbrd.asp
- Solar Energy <https://www.journals.elsevier.com/solar-energy>
- The Open Petroleum Engineering Journal <https://benthamopen.com/topej/>
- Vacuum <https://www.journals.elsevier.com/vacuum>
- Wear <https://www.journals.elsevier.com/wear>

7. Participation in R&D projects

Participação em projectos de investigação (coordenador/membro de equipas)

- Research line: MATERIALS PROCESSING USING SOLAR FURNACES

2017:

Coordinator at IST (the contractor is IST-ID) of H2020-LCE-2016-ERA: Integrating National Research Agendas on Solar Heat for Industrial Processes (acronym: INSHIP)

Duration: 4 years, from 2017-01-01 to 2020-12-31, ongoing Project.

Further information is available at:

http://cordis.europa.eu/project/rcn/207022_en.html

<http://www.inship.eu/>

2015:

Research leader of the project "TEMP-CONTROL":

The research proposal titled "Use of high-temperature materials for improving temperature uniformity and testing conditions in indirectly-irradiated solar reactors" was selected to get access to the HSF Facility at CIEMAT-PSA within the framework of the EU-DG RTD's project: "The European Solar Research Infrastructure for Concentrated Solar Power. Second Phase: SFERA-II". This activity is regulated by the contract nº 312643 between CIEMAT-PSA and the European Commission.

2014:

Research leader of the project "INDIRECT HEATING":

The research proposal entitled "Study on improving temperature control for materials processing in solar furnaces" was selected to get access to the new Horizontal Solar Furnace at CIEMAT-PSA within the framework of the EU-DG RTD's project: "The European Solar Research Infrastructure for Concentrated Solar Power. Second Phase: SFERA-II". This activity is regulated by the contract nº 312643 between CIEMAT-PSA and the European Commission.

2014:

Coordinator at IST (the contractor is IST-ID) of Integrated Research Programme (IRP) entitled: "Scientific and Technological Alliance for Guaranteeing the European Excellence in Concentrating Solar Thermal Energy" (acronym: STAGE-STE) contract nº 609837

This IRP which was submitted to call FP7-ENERGY-2013-IRP. Starting date: February 1, 2014. Duration: 4 years.

Further information is available at:

http://cordis.europa.eu/projects/rcn/111484_en.html

<http://www.stage-ste.eu/>

2013:

Research leader of the project "NH3NITRIDING":

The research proposal entitled "Study on nitriding of Fe in stream of NH3 gas and initial trials to nitride hard metal inserts using solar radiation heating" was selected to get access to the Plataforma Solar de Almería (PSA), Spain, as "SFERA-user" of the SF-5 Facility at PSA within the framework of the EU-DG RTD's Solar Facilities for the European Research Area (SFERA) project (an activity that is regulated by the contract nº 228296 between CIEMAT-PSA and the European Commission). This research proposal (acronym: NH3NITRIDING) is a consequence of the successful solar test campaign previously carried out under the frame of SFERA project "NH3FLOW".

2011-2012:

Research leader of the project "NH3FLOW":

The research proposal entitled "Design, set-up and testing of reaction chamber for performing Solar Synthesis of IVB-VIB-groups Transition Metals Nitrides in ammonia atmospheres at PSA SF-5 facility under well controlled conditions" was selected to get access to the Plataforma Solar de Almería, Spain, within the framework of the E.U. 7th Framework Programme: Solar Facilities for the European Research Area (SFERA); contract reference number: SFERA-228296 (acronym NH3FLOW). The experimental setup that was developed (gas installation and reaction chamber) proved to be adequate for performing reaction of IV-VI-groups transition metals in ammonia atmospheres in view of obtaining the corresponding metal nitrides. The reaction chamber is based on a pyrex glass, allowing vacuum to be performed prior to each test, in order to evacuate the chamber and keep oxygen impurities at a minimum level.

2010:

Research leader of the project "SunSynt".

The research proposal entitled "Synthesis of carbides and carbo-nitrides under concentrated solar beam applying selected wave-length range by passing through colour filter" (SunSynt) was selected to get access to PROMES-CNRS solar facilities within the framework of the EU-DG RTD's Solar Facilities for the European Research Area (SFERA) project in year 2010. The aim of our experimental campaign was to look into reactions of d-group metals (Ti; V, Nb, Ta; Mo, W) with N₂ gas under solar radiation heating, i.e. the first attempt to synthesizing nitride instead of carbide of d-group transition elements. As we use graphite crucible as the sample holder, influence of C₂ radicals yielded from graphite holder was inevitable to yield carbo-nitride in place of pure nitride from the present experimental work. But, we found insertion of sky blue filter (068) led to significant suppression of carburizing reaction to yield M(C,N) with higher N content. The XRD results must be analyzed in further detail, but the acquired results appeared to be novel and worthwhile to be published.

2007:

Member of the research team of project SOLCONTROL (Investigador Responsável: Prof. J. Miranda Lemos).

The research proposal entitled "Adaptive Temperature Control of a Solar Furnace" (SOLCONTROL) presented in November 2006 was selected by the Users Selection Panel of the project SOLFACE - SOLar high flux FACilities for Europe, granted by the European Community, for the access of European researchers to the PROMES-CNRS's high flux solar facilities at Odeillo, France - to run in 2007. The objectives of this project were twofold: • To develop an adaptive controller for temperature control set-point of a solar furnace (a 6KW solar furnace at Odeillo Solar Plant) used for material testing such as thermal stress experiments. • To perform thermal stress experiments on silicon carbide (SiC) and alumina (Al₂O₃) samples by controlling, with precision, the temperature cycling on samples. Although in general solar furnaces are controlled manually, their operation requires skilled operators and imposes an extra burden on the tasks to be performed during each experiment. The use of automatic control not only allows to alleviate the operator from repetitive tasks, but also leads to more systematic procedures that result in increased performance capability for replicating experiments. Even more important, it allows innovative material treatments, impossible to carry out using conventional procedures. Furthermore, the incorporation of an adaptation mechanism dispenses prior knowledge of the thermal properties of the material to be tested for calibrating the controller.

2005-2006:

Research leader of the project SolarSYNT: "Carbide Synthesis of d-group transition metals and further studies on ceramics using the solar spectral radiation".

The research proposal entitled "Carbide Synthesis of d-group transition metals and further studies on ceramics using the solar spectral radiation" (SolarSYNT), submitted in December 2004, and selected by the Users Selection Panel of the project SOLFACE - SOLar high flux FACilities for Europe, granted by the European Community, for the access of European researchers to the PROMES-CNRS's high flux solar facilities at Odeillo, France - to run in 2005-2006.

The main objective was to carry out a series of solar-synthesis test campaigns for obtaining carbides of d-group transition metal. To look into some peculiar experimental evidences acquired during our past few years of solar carbide synthesis work at PSA, we felt it desirable to undertake supplementary experiments, e.g. reaction between tantalum (Ta) and carbon (graphite or amorphous carbon) in tap-compacted powder mixture state under solar radiation heating.

2000-2003:

Coordinator ("Investigador Responsável") of FCT POCTI/ESE/33804/99 "Construction of a Fresnel-Lens Solar Furnace for Synthesis and Sintering of Materials".

Starting date: November 2000. Conclusion date: April 2003.

The main objective was to build a small, versatile and automated solar furnace using a Fresnel lens to concentrate the energy and a special chamber where the reactions occur. This furnace was installed at the roof of one of the IST buildings.

1997-2002:

Research leader of the project entitled "Preparation of Refractory Carbides through Reaction with Non-Graphitic (Amorphous) Active Carbon".

Starting date: April 1997. Conclusion date: September 2002.

This project was initially sponsored by TMR (Training and Mobility of Researchers) and, later on, by IHP (Improving Human Potential) Programmes "Access to Research Infrastructures". The project allowed the access of our group to the solar furnace at Plataforma Solar de Almería.

1997-1999:

Coordinator at IST of INCO-COPERNICUS / THERMIE contract ICOP-DEMO-2124-1996: "High Power Density Solar Beams for Surface Modification and Synthesis of Materials for Engineering Applications" (SUNRISE).

Partners: CENIM (Centro Nacional de Investigaciones Metalurgicas, Madrid, Spain), Materials Science Institute of the Scientific Association "Physics-Sun" (Tashkent, Uzbekistan) and I.S.T.

Starting date: July 1997. Conclusion date: December 31, 1999.

Summary of IST participation: The involvement of our group in this 2-year INCO-COPERNICUS research project ("demonstration project under the THERMIE programme") using the Tashkent and Parkent solar furnaces in Uzbekistan, has proved that Solar Furnaces (SF) are very promising for preparing sintered ceramic (consolidated) bodies with similar mechanical properties as those produced in conventional furnaces. In this project - for the 1st time in the world (as far as we know)- sintering of technical ceramics (Tungsten Carbide, Alumina, and LAS Glass Ceramic bodies) was performed with a SF. It was demonstrated that the densification of the initial powder compact proceeds at much higher rates, compared to those of conventional sintering in an Electric Furnace (EF). Mechanical properties (e.g. fracture toughness and hardness) of both SF and EF sintered bodies were similar.

- Research line: ORNAMENTAL AND ENGINEERED STONES (CHARACTERIZATION AND PROCESSING)

2010-2013:

Coordinator at IST of the project "LEANMACHINE: Consórcio para o desenvolvimento de máquina funcional integrada para a produção de produtos ou rochas ornamentais". Contract 2010/013304 with AGÊNCIA DE INOVAÇÃO.

Participants: ZEUGMA - Tecnologia de Sistemas Industriais, S.A. (Promotor Líder); TECNIBITE - INFORMÁTICA, S.A.; and Instituto Superior Técnico.

Starting date: 1.11.2010. Conclusion date: December 31, 2013.

2010-2012:

Coordinator at IST of E.C. "Capacities-FP7-RESEARCH FOR SMEs" Project contract FP7-SME-2010-1-262618:

"Development of novel stone sawing equipment to valorise undersized and irregular stone blocks for a more rationale use of natural stone quarry resources" (XStone).

Participants:

Companies: Pedrini S.p.A. (Coordenador); Novamech S.p.A.; Pomdi - Herramientas De Diamante S.A.; Marmara Laskaridi; Cortesi Graniti S.r.l.; Marmores Galvão-Eduardo Galvão Jorge & Filhos; EUROROC - Federation de l'Industrie Marbriere et de l'industrie Granitiere de la CEE (AISBLSA).

RTD Performers: D'Appolonia S.p.A.; INSTITUTO SUPERIOR TECNICO; National Technical University of Athens.

Starting date: 01.07.2010. Conclusion date: August 31, 2012.

2008-2011:

Coordinator at IST of E.C. "Capacities-FP7-RESEARCH FOR SMEs" Project contract FP7-SME-1-2007-222257:

"Development of an automated classification system for polished stone slabs and tiles" (PROVIPS).

Participants: CNI Informatica SRL (Coordenador); Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.; D'Appolonia S.p.A.; INSTITUTO SUPERIOR TECNICO; Helion GmbH; FrontWave S.A.; FURRER S.p.A.; MASERC - Marmores Sérgio Coelho, Lda; SPECIM Spectral Imaging Oy.

Starting date: 01.10.2008. Conclusion date: March 31, 2011.

2005-2008:

Coordinator at IST of E.C. 6FP "Collective Research Project"

contract COLL-CT-2005-516417: "Eco-Efficient and High Productive Stone Processing by Multifunctional Materials" (Pro-Stone).

Participants: D'Appolonia S.p.A. (Coordenador & RTD Performer); European and International Federation of Natural Stone Industries; ZDN; Associazioni Industriali di Massa Carrara; Associação Portuguesa dos Industriais de Mármore e Ramos Afins; Bulgaro-Italiana Targoska, Zemedelska e Industrialna Kamara; Association of Marble Companies of Attica; Ditta Ripamonti Gianni Sas; Mincon LTD; Tesimag S.r.l.; Sodex ood Ltd; TECHMI ood; Granitos Maceira SA; Grupo GALRÃO SA; MASERC - Marmores Sérgio Coelho, Lda; Poschacher Natursteinwerke, GmbH; Zeidler&Wimmel, Steinbruch- und Steinmetzbetriebe, GmbH.; Abra Tomasz Czekaj; ECSEL S.p.A.; Megamarm LTD; Laska; Sviluppo Italia Toscana (RTD Performer); Instituto Superior Técnico (RTD Performer); Institute of Physics, Academy of Sciences of the Czech Republic (RTD Performer); National Technical University of Athens (RTD Performer).

Starting date: July 1, 2005. Finished in June 30, 2008 .

2003-2005:

Coordinator at IST of CRAFT contract G1ST-CT-2002-50271: "Machine Vision Inspection of Polished Stone" (VIPS).

RTD Performers: I.S.T., University of the West of England (Bristol) and D'Appolonia (Génova), working for the following companies: A.J. FIGUEIREDO (P), MASERC - Marmores Sérgio Coelho (P), ZUNINO MARMI (I), CNI-INFORMATICA (I) and WHITE DESIGN CO (UK).

Starting date: March 1, 2003. Finished in February 28, 2005.

2001-2004:

Coordinator at IST of GROWTH contract G1RT-CT2001-05019: "Thematic Network on Ornamental and Dimensional Stones" (OSNET) www.osnet.ntua.gr

This thematic network started its activities in June 2001 (duration: 41 months) and it was coordinated by the National Technical University of Athens (Prof. Ioannis Paspaliaris, Laboratory of Metallurgy). The other main partners (sector leaders) were: University of the West of England UWE-Bristol (UK), D'Appolonia SpA (I), CEVALOR (P), Foundation for Technical and Industrial Research at the Norwegian Institute of Technology (N), Internazionale Marmi e Macchine Carrara SpA (I), and University of Hannover (D). Special interaction was established with Dr. Sagar Midha (UWE-Bristol), Prof. Frisa Morandini (Politecnico de Torino), and the portuguese companies A.J.FIGUEIREDO (equipment manufacturer), EQUIMARMORE (diamond tool producer) and MASERC (stone processor).

1998-2002:

Coordinator at IST of PRAXIS XXI contract (Ref. 2/2.1/TPAR/2026/95) and POCTI contract (Ref: POCTI / EME / 2026 / 1995 - 2ª fase): "Evaluation of diamond tool behaviour in cutting and finishing processes of ornamental stones".

Partners: I.S.T. and CEVALOR.

Starting date: December 1, 1998. Finished in November 30, 2002.

1997-1999:

Coordinator at IST of CRAFT contract CE-BRST-CT96-5094: "Optimization of Stone Processing using Diamond Tools" (SPUD).

RTD Performers: University of the West of England (Bristol) and I.S.T., working for the following companies: FABRIMAR (P), PIRRA (P), POMDI (E) e FEELYSTONE (IRL).

Starting date: February 1, 1997. Finished in July 1999.

- OTHER RESEARCH TOPICS:

2005-2007:

Coordinator of contract REEQ/761/CTM/2005 "NON-CONTACT EXTENSOMETRY" / "Extensometria de Não-Contacto".

Starting date: 01/01/2005. Conclude in 2007.

2001-2004:

Coordinator at IST of GROWTH contract G6RD-CT-2001-00523: "Ceramic and Carbon Fibers: Validation of Testing Methods" (VaFTeM) <http://odin.jrc.nl/ce/>

Partners:

- SNECMA: Société Nationale d'Etudes et de Construction de Moteurs d'Avions (F)
- European Commission – DG JRC – Institute for Advanced Materials (IAM) in Petten
- CEAT: Centre d'Essais Aéronautique de Toulouse (F)
- Commissariat à l'Energie Atomique (F)
- SKT - Schunk Kohlenstofftechnik GmbH (D)
- Institute of Material Physics, University of Vienna (A)
- CNRS – UMR 5801: LCTS - Laboratoire des Composites Thermostructuraux (F)
- FORTH/ICE-HT: Inst. of Chemical Engineering & High Temperatures Chem. Processes (Gr)
- INSA: Institut National des Sciences Appliquées de Lyon (F)
- NPL Management Ltd (UK)
- Instituto Superior Técnico (P)
- Ecole Nationale Supérieure des Mines de Paris – Centre des Matériaux (F)

Starting date: January 1, 2002. Finished in December 31, 2004.

1997-2000:

Member of the research team of PRAXIS XXI project no. 3/3.1/CTAE/1919/95 "Processos de anodização não-poluente para ligas de alumínio utilizadas na indústria aeronáutica" (Investigador Responsável: Prof. Mário Guerreiro da Silva Ferreira).

1996-1998:

Coordinator at IST of the project entitled: "Desenvolvimento de Tecnologias de Produção de Peças em Carboneto de Silício", under the "Programa PEDIP II" research contract no. PS/330/96/036.

Partners:

- DURIT - Metalurgia Portuguesa do Tungsténio Lda.
- INETI
- Universidade de Aveiro
- I.S.T.

Starting date: May 27, 1996. Finished in October 1998.

1990-1993:

Coordinator at IST of CECA / DG XII contract 7210/MB/932-90 "Development of New Multilayer Composites of Steel and Metallic Matrix"

Partners: CENIM (Centro Nacional de Investigaciones Metalúrgicas, Madrid, Espanha) and I.S.T.

Starting date: November 1, 1990. Finished in October 31, 1993.

1990-1994:

Coordinator at IST of BRITE-EURAM contract no. BREU-0116-C "Plasma and Laser Induced Vapour Deposition of Hermetic Coatings in Optical Fibers" (PLAID).

Partners:

- THOMSON-CSF (France)
- LABEL SA (Belgium)
- Université Libre de Bruxelles (Belgium)
- FO.R.T.H. (Greece)
- I.S.T.

Starting date: March 1, 1990. Finished in February 28, 1994.

8. Prizes and awards received

Year	Name of the prize or award	Promoting entity
2016	2016 FFEMS Top Reviewer Award for distinguished performance as a reviewer in 2014, for the journal Fatigue & Fracture of Engineering Materials & Structures	John Wiley & Sons Limited
1983	"Corrosion Fatigue Crack Growth in Medium Strength Steels" NATO Scientific Affairs Division research grant 210/82, together with Dr John C. Radon (Imperial College, London)	NATO Scientific Affairs Division
2008	Best Industrial Paper Award (co-author)	Committee of the 8th Portuguese Conference on Automatic Control
2006	S.P.M. 25 Year Medal	Sociedade Portuguesa de Materiais

9. Published works

Teses

"Fadiga de Aços-Carbono", dissertação apresentada para obtenção do grau de Doutor em Engenharia Mecânica pela Universidade Técnica de Lisboa (Instituto Superior Técnico), 1986.

Livros (autor)

L. Guerra Rosa (autor), "Desenvolvimento de novos materiais compósitos de aço e matriz metálica", EUR 16182 PT, Printed in Luxembourg, ISBN 92-828-1704-0 (1998) 131 pp.

Livros (editor)

"Global Stone Congress", LG Rosa, ZCG Silva and L Lopes (editors), total of 396 pages, Trans Tech Publications, ISBN 978-3-03785-653-6 (2013).

Advanced Materials Forum V, LG Rosa and F Margarido (editors), two soft-cover volumes (Part 1 and Part 2), total of 1600 pages, Trans Tech Publications, ISBN 978-0-87849-288-6 (2010).

Textos vários elaborados na qualidade de Consultor Técnico (para os temas dos domínios da Metalurgia, Siderurgia, Propriedades Mecânicas, Fundição e Ciência dos Materiais) da "Nova Enciclopédia LAROUSSE", edição exclusiva para a língua portuguesa, do Círculo de Leitores, Lda. e Larousse, em 22 volumes (ISBN 972-42-1476-1 obra completa) publicados entre 1996 e 1999.

Tradutor dos Capítulos 1, 10, 12 e 13 do livro de William F. Smith, "Principles of Materials Science and Engineering", 3rd ed., McGraw-Hill (1996), cuja versão em língua portuguesa "Princípios de Ciência e Engenharia de Materiais" (ISBN 972-8298-68-4) foi editada em 1998.

Textos vários elaborados na qualidade de Consultor Técnico (para os temas dos domínios da Metalurgia, Siderurgia, Propriedades Mecânicas, Fundição e Ciência dos Materiais) da "Nova Enciclopédia LAROUSSE", edição exclusiva para a língua portuguesa, do Círculo de Leitores, Lda. e Larousse, em 22 volumes (ISBN 972-42-1476-1 obra completa) publicados entre 1996 e 1999.

MATERIAIS 97, Guerra Rosa L (editor), Anais do 8º Encontro Nacional da Sociedade Portuguesa de Materiais, realizado na Marinha Grande, de 11 a 13 de Junho de 1997, Volume 1 (353 pp.), Volume 2 (357 pp.) & Suplemento (69 pp.).

MATERIAIS 91, Pádua Loureiro A, Guerra Rosa L, Rosa M E e Oliveira M M (editores), Actas do V Encontro Nacional da Sociedade Portuguesa de Materiais CEMUL/S.P.M., Lisboa (1991), em 2 volumes, 747 pp.

"Surface Engineering with High Energy Beams", Pádua Loureiro A, Conde O, Guerra Rosa L and Vilar R (editors), Proceedings of 2nd IFHT Seminar, Lisbon, September 1989, published by Trans Tech Publications, prev. publ. in Key Eng. Materials, ISBN 0-87849-607-6 (1990) 610 pp.

"Advances in Fatigue Science and Technology", Moura Branco C and Guerra Rosa L (editors), NATO ASI Series E 159, Kluwer Academic Publishers, ISBN 0-7923-0105-6 (1989) 976 pp.

Capítulos de livros

Amaral PM, Pires V, Fernandes JC, Rosa LG, "Ornamental Stones", Chapter 9 in: Materials for Construction and Civil Engineering: Science, Processing, and Design, ISBN 978-3-319-08236-3, Springer, 2015
URL: <http://www.springer.com/gp/book/9783319082356>

Amaral PM, Pires V, Fernandes JC, Rosa LG, "Rochas Ornamentais", Capítulo 9 in: Ciência e Engenharia de Materiais de Construção, IST Press, 2012 (1ª edição) pp 463-517.

Rosa LG et al., "Test Methodology to Evaluate the Wear Performance of PM Matrices used in Diamond Impregnated Tools for Cutting Hard Materials", Chapter 22 in Powder Metallurgy for Automotive and High Performance Materials in Engineering Industries (ed. P. Ramakrishnan), New Age International (P) Ltd., ISBN 978-81-224-3031-8; (2012) pp 186-193.

URL: https://dspace.ist.utl.pt/bitstream/2295/582546/6/test_methodology.pdf

Rosa LG, "High-temperature fracture behavior of ceramic matrix composites: an overview", Keynote lecture presented at the symposium Fracture Mechanics 2008, October 31 - November 3, 2008, Hangzhou, China; published in "Evaluation, Inspection and Monitoring of Structural Integrity", editors G.C.Sih, S.T.Tu and Z.D.Wang, ISBN 978-7-5628-2403-9/TB.25; pp 17-28.

URL: https://dspace.ist.utl.pt/bitstream/2295/242971/5/9_mb.pdf

Guerra Rosa L, "Diamond tool characterisation methodologies: new perspectives for stone processing", Chapter 5 in Application of Diamond Technology in the Stone Sector, OSNET Editions, Volume 4, EUR 20637 / 4, edited by S. Carosio and I. Paspaliaris, pp. 45- 63, (2004).

URL: [https://dspace.ist.utl.pt/bitstream/2295/93431/4/vol._4_eur20637_4_\(2004\).pdf](https://dspace.ist.utl.pt/bitstream/2295/93431/4/vol._4_eur20637_4_(2004).pdf)

Martins CS, Steen M, Bressers J, Guerra Rosa L, "Mechanical Performance of a Commercial Silicon Nitride Pre-Exposed to a Sulphidizing Atmosphere at High Temperature", in Tailoring of Mechanical Properties of Si₃N₄ Ceramics, Editors: Hoffmann MJ, Petzow G, NATO ASI Series E 276, Kluwer Academic Publishers, 1994, pp. 415-427.

URL: [https://dspace.ist.utl.pt/bitstream/2295/380520/3/nato_asi_series_e_276_\(1994\).pdf](https://dspace.ist.utl.pt/bitstream/2295/380520/3/nato_asi_series_e_276_(1994).pdf)

Rosa LGuerra, Radon JC, "Fatigue Threshold Behaviour: Theoretical Aspects and Open Questions", in Advances in Fatigue Science and Technology, NATO ASI Series E 159, Kluwer Academic Publishers, 1989, pp.141-156.

URL: [https://dspace.ist.utl.pt/bitstream/2295/594435/2/nato_asi_series_e_159_\(1989\)_141-156.pdf](https://dspace.ist.utl.pt/bitstream/2295/594435/2/nato_asi_series_e_159_(1989)_141-156.pdf)

Radon JC, Rosa LGuerra, "Fatigue Threshold Behaviour: Modelling of Fatigue Crack Growth near Threshold", in Advances in Fatigue Science and Technology, NATO ASI Series E 159, Kluwer Academic Publishers, 1989, pp.129-139.

URL: [https://dspace.ist.utl.pt/bitstream/2295/594423/2/nato_asi_series_e_159_\(1989\)_129-139.pdf](https://dspace.ist.utl.pt/bitstream/2295/594423/2/nato_asi_series_e_159_(1989)_129-139.pdf)

Guerra Rosa L, "Corrosão e Resistência ao Ambiente", Capítulo 15 do Curso de Materiais de Construção Mecânica, ed. Centro de Estudos de Engenharia Mecânica, Faculdade de Engenharia da Universidade do Porto (1982) 19 pp.

Artigos em revistas de circulação internacional com arbitragem científica

- Research line: MATERIALS PROCESSING USING SOLAR FURNACES

Title: Low-temperature short-time nitriding of Va-group metals, V, Nb and Ta, in uncracked NH₃ gas under heating with concentrated solar power (CSP)

Author(s): Fernandes JC, Oliveira FAC, Rosa LG, Rodriguez J, Cañadas I, Magalhães T, Shohoji N

Source: Ciência & Tecnologia dos Materiais Volume: 28, Issue:2 Pages: 112-116 Published: 2016

Title: Temperature uniformity improvement in a solar furnace by indirect heating

Author(s): Oliveira FAC, Fernandes JC, Rodriguez J, Cañadas I, Galindo J, Rosa LG

Source: Solar Energy Volume: 140 Pages: 141-150 Published: 2016

DOI: 10.1016/j.solener.2016.11.004

Title: Reactions of IVa-group metals, Ti and Zr, with uncracked NH₃ gas at a temperature in the range between 600 and 800°C under heating with concentrated solar beam at PSA

Author(s): Oliveira FAC, Figueira Vasques I, Fernandes JC, Cañadas I, Rodriguez J, Rosa LG, Shohoji N

Source: Solar Energy Volume: 138 Pages: 119-127 Published: 2016

DOI: 10.1016/j.solener.2016.09.012

Title: Structural Integrity Assessment of Glass Components in Concentrated Solar Power (CSP) Systems

Author(s): Rosa LG, Fernandes JC, Li B

Source: Theoretical and Applied Fracture Mechanics Volume: 80 Pages: 14-21 Published: 2015

DOI: 10.1016/j.tafmec.2015.09.002

Title: Numerical and experimental study on improving temperature uniformity of solar furnaces for materials processing

Author(s): Li B, Oliveira FAC, Rodriguez J, Fernandes JC, Rosa LG

Source: Solar Energy Volume: 115 Pages: 95-108 Published: 2015

DOI: 10.1016/j.solener.2015.02.023

Title: Nitriding VI-group metals (Cr, Mo and W) in stream of NH₃ gas under concentrated solar irradiation in a solar furnace at PSA (Plataforma Solar de Almería)

Authors: Oliveira FAC, Rosa LG, Fernandes JC, Rodriguez J, Cañadas I, Magalhães T, Shohoji N

Source: Solar Energy Volume: 114 Pages: 51-60 Published: 2015

DOI: 10.1016/j.solener.2015.01.028

Title: Integrated assessment procedure for determining the fracture strength of glass components in CSP systems

Author(s): Rosa LG, Fernandes JC, Li B

Source: Frattura ed Integrità Strutturale Issue: 30 Pages: 438-445 Published: 2014

DOI: 10.3221/IGF-ESIS.30.53

Title: Synthesizing Higher Nitride of Molybdenum (Mo) and Iron (Fe) in Ammonia (NH₃) Gas Stream under Irradiation of Concentrated Solar Beam in a Solar Furnace at Plataforma Solar de Almería (PSA)

Author(s): Shohoji N, Oliveira FAC, Fernandes JC, Rosa LG, Rodriguez J, Cañadas I, Ramos C, Magalhães T, Cestari F

Source: Materialwissenschaft und Werkstofftechnik Volume: 44 Issue: 12 Pages: 959-971 Published: 2013

DOI: 10.1002/mawe.201300163

Title: Synthesizing Carbo-Nitrides of Some d-Group Transition Metals Using a Solar Furnace at PSA

Author(s): Shohoji N, Oliveira FAC, Rosa LG, Fernandes JC, Magalhães T, Coelho MBC, Rodriguez J, Cañadas I, Ramos C, Martinez D

Source: Materials Science Forum Volume: 730-732 Pages: 153-158 Published: 2013

DOI: 10.4028/www.scientific.net/MSF.730-732.15

Title: Crystal Grain Morphology Evolution over Ti, V, Nb and Ta Surface Heated in N₂ Gas Environment to 2000°C by Filtered Concentrated Solar Beam in a Solar Furnace at PROMES-CNRS

Author(s): Oliveira FAC, Rosa LG, Peraudeau G, Granier B, Fernandes JC, Magalhães T, Shohoji N

Source: Materials Transactions Volume: 53 Issue: 3 Pages: 537-545 Published: 2012

DOI: 10.2320/matertrans.M2011299

Title: Influence of Colour Filter on Reaction Products from Mo and W Heated to 2000°C by Concentrated Solar Beam in N₂ Gas Environment in a Solar Furnace at PROMES-CNRS

Author(s): Peraudeau G, Oliveira FAC, Rosa LG, Granier B, Fernandes JC, Magalhães T, Shohoji N

Source: Materials Transactions Volume: 52 Issue: 11 Pages: 2083-2090 Published: 2011

DOI: 10.2320/matertrans.M2011019

Title: Temperature control of a solar furnace for material testing

Author(s): Andrade Costa B, Lemos JM, Rosa LG

Source: International Journal of Systems Science Volume: 42 Issue: 8 Pages: 1253-1264 Published: 2011

DOI: 10.1080/00207721.2011.588894

Title: Reactions of Ti, V, Nb and Ta with N₂ Gas at 2000°C under Concentrated Solar Beam in a Solar Furnace at PROMES-CNRS

Author(s): Shohoji N, Oliveira FAC, Rosa LG, Peraudeau G, Granier B, Magalhães T, Fernandes JC

Source: Materials Transactions Volume: 52 Issue: 4 Pages: 719-727 Published: 2011

DOI: 10.2320/matertrans.M2010314

Title: Heterogeneity along the Height in Disc Specimens of Graphite/Tungsten Powder Mixtures with Sub-Stoichiometric Carbon Atom Ratios Heated by Concentrated Solar Beam to 1600°C

Author(s): Shohoji N, Magalhaes T, Oliveira FAC, Rosa LG, Fernandes JC, Rodriguez J, Canadas I, Martinez D

Source: Materials Transactions Volume: 51 Issue: 2 Pages: 381-388 Published: 2010

DOI: 10.2320/matertrans.M2009313

Title: Carbide Phases Synthesised from C/Mo Powder Compacts at Specified Sub-Stoichiometric Ratios by Solar Radiation Heating to Temperatures between 1600°C and 2500°C

Author(s): Granier B, Shohoji N, Oliveira FAC, Magalhães T, Fernandes JC, Rosa LG

Source: Materials Transactions Volume: 50 Issue: 12 Pages: 2813-2819 Published: 2009

DOI: 10.2320/matertrans.M2009167

Title: Mechanical Properties of Dense Cordierite Discs Sintered by Solar Radiation Heating

Author(s): Oliveira FAC, Rosa LG, Fernandes JC, Rodríguez J, Cañadas I, Martínez D, Shohoji N

Source: Materials Transactions Volume: 50 Issue: 9 Pages: 2221-2228 Published: 2009

DOI: 10.2320/matertrans.MRA2008369

Title: Carbide Synthesis from Graphite/molybdenum Powder Mixtures at Sub-Stoichiometric Ratios under Solar Radiation Heating to 1900°C

Author(s): Granier B, Badie JM, Oliveira FAC, Magalhães T, Shohoji N, Rosa LG, Fernandes JC

Source: Materials Transactions Volume: 49 Issue: 11 Pages: 2673-2678 Published: 2008

DOI: 10.2320/matertrans.MRA2008202

Title: Surface Singularity upon Solar Radiation Heating of Graphite/Tungsten Powder Mixture Compacts to Temperatures in Excess of 1600°C

Author(s): Oliveira FAC, Granier B, Badie JM, Fernandes JC, Rosa LG, Shohoji N

Source: Advanced Materials Forum IV Volume: 587-588 Pages: 993-997 Published: 2008

DOI: 10.4028/www.scientific.net/MSF.587-588.993

Title: Formation of hexagonal eta-MoC_{1-x} phase at a temperature lower than 1660°C by solar radiation heating under presence of excess free carbon

Author(s): Shohoji N, Badie JM, Granier B, Oliveira FAC, Fernandes JC, Rosa LG

Source: International Journal of Refractory Metals & Hard Materials Volume: 25 Issue: 3 Pages: 220-225

Published: 2007

DOI: 10.1016/j.ijrmhm.2006.05.004

Title: High meta-stability of tungsten sub-carbide W₂C formed from tungsten/carbon powder mixture during eruptive heating in a solar furnace

Author(s): Oliveira FAC, Fernandes JC, Badie JM, Granier B, Rosa LG, Shohoji N

Source: International Journal of Refractory Metals & Hard Materials Volume: 25 Issue: 1 Pages: 101-106

Published: 2007

DOI: 10.1016/j.ijrmhm.2006.03.001

Title: Nano-meter size WC whiskers grown over a compacted pellet of graphite/tungsten powder mixture heated with an ultra-fast heating rate by a concentrated solar beam

Author(s): Dias S, Oliveira FAC, Granier B, Badie JM, Fernandes JC, Guerra Rosa L, Shohoji N

Source: Materials Transactions Volume: 48 Issue: 5 Pages: 919-923 Published: 2007

DOI: 10.2320/matertrans.48.919

Title: Synthesis of tungsten sub-carbide W₂C from graphite/tungsten powder mixtures by eruptive heating in a solar furnace

Author(s): Oliveira FAC, Granier B, Badie J-M, Fernandes JC, Guerra Rosa L, Shohoji N

Source: International Journal of Refractory Metals & Hard Materials Volume: 25 Issue: 4 Pages: 351-357

Published: 2007

DOI: 10.1016/j.ijrmhm.2006.10.002

Title: Kinetic aspects of reaction between tantalum and carbon material (active carbon or graphite) under solar radiation heating

Author(s): Fernandes JC, Oliveira FAC, Granier B, Badie JM, Rosa LG, Shohoji N

Source: Solar Energy Volume: 80 Issue: 12 Pages: 1553-1560 Published: 2006

DOI: 10.1016/j.solener.2006.01.001

Title: Solar sintering of cordierite-based ceramics at low temperatures

Author(s): Oliveira FAC, Shohoji N, Fernandes JC, Rosa LG

Source: Solar Energy Volume: 78 Issue: 3 Pages: 351-361 Published: 2005

DOI: 10.1016/j.solener.2004.08.013

Title: Characterisation of solar-synthesised TiCx (x=0.50, 0.625, 0.75, 0.85, 0.90 and 1.0) by X-ray diffraction, density and Vickers microhardness

Author(s): Fernandes JC, Anjinho C, Amaral PM, Rosa LG, Rodriguez J, Martinez D, Oliveira FAC, Shohoji N

Source: Materials Chemistry and Physics Volume: 77 Issue: 3 Pages: 711-718 Published: 2003

DOI: 10.1016/S0254-0584(02)00131-1

Title: Fracture toughness of solar-sintered WC with Co additive

Author(s): Rosa LG, Amaral PM, Anjinho C, Fernandes JC, Shohoji N

Source: Ceramics International Volume: 28 Issue: 3 Pages: 345-348 Published: 2002

DOI: 10.1016/S0272-8842(01)00099-2

Title: Photochemical effects in carbide synthesis of d-group transition metals (Ti, Zr; V, Nb, Ta; Cr, Mo, W) in a solar furnace at PSA (Plataforma Solar de Almeria)

Author(s): Rodriguez J, Martinez D, Rosa LG, Fernandes JC, Amaral PM, Shohoji N

Source: Journal of Solar Energy Engineering-Transactions of the ASME Volume: 123 Issue: 2 Pages: 109-116 Published: 2001

DOI: 10.1115/1.1350565

Title: Carbide formation of Va-group metals (V, Nb and Ta) in a solar furnace

Author(s): Amaral PM, Fernandes JC, Rosa LG, Martinez D, Rodriguez J, Shohoji N

Source: International Journal of Refractory Metals & Hard Materials Volume: 18 Issue: 1 Pages: 47-53 Published: 2000

DOI: 10.1016/S0263-4368(00)00014-7

Title: Catalytic graphitisation of amorphous carbon during solar carbide synthesis of VIa group metals (Cr, Mo and W)

Author(s): Shohoji N, Amaral PM, Fernandes JC, Rosa LG, Martinez D, Rodriguez J

Source: Materials Transactions JIM Volume: 41 Issue: 1 Pages: 246-249 Published: 2000

URL: <http://www.jim.or.jp/journal/e/pdf3/41/01/246.pdf>

Title: Weibull statistical analysis of flexure breaking performance for alumina ceramic disks sintered by solar radiation heating

Author(s): Fernandes JC, Amaral PM, Rosa LG, Shohoji N

Source: Ceramics International Volume: 26 Issue: 2 Pages: 203-206 Published: 2000

DOI: 10.1016/S0272-8842(99)00041-3

Title: Catalytic acceleration of graphitisation of amorphous carbon during synthesis of tungsten carbide from tungsten and excess amorphous carbon in a solar furnace

Author(s): Shohoji N, Rosa LG, Fernandes JC, Martinez D, Rodriguez J

Source: Materials Chemistry and Physics Volume: 58 Issue: 2 Pages: 172-176 Published: 1999

DOI: 10.1016/S0254-0584(98)00275-2

Title: Influence of gas environment on synthesis of silicon carbide and some carbides and carbonitrides of d-group transition metals through reaction between metal powders and amorphous carbon powders in a solar furnace at PSA (Plataforma Solar de Almeria)

Author(s): Martinez D, Rodriguez J, Rosa LG, Fernandes JC, Shohoji N

Source: Journal De Physique Iv Volume: 9 Issue: P3 Pages: 405-410 Published: 1999

DOI: 10.1051/jp4:1999363

Title: Photochemically promoted formation of higher carbide of molybdenum through reaction between metallic molybdenum powders and graphite powders in a solar furnace

Author(s): Rosa LG, Fernandes JC, Amaral PM, Martinez D, Rodriguez J, Shohoji N

Source: International Journal of Refractory Metals & Hard Materials Volume: 17 Issue: 5 Pages: 351-356 Published: 1999

DOI: 10.1016/S0263-4368(99)00020-7

Title: X-ray diffraction characterisation of carbide and carbonitride of Ti and Zr prepared through reaction between metal powders and carbon powders (graphitic or amorphous) in a solar furnace
Author(s): Fernandes JC, Amaral PM, Rosa LG, Martinez D, Rodriguez J, Shohoji N
Source: International Journal of Refractory Metals & Hard Materials Volume: 17 Issue: 6 Pages: 437-443
Published: 1999
DOI: 10.1016/S0263-4368(99)00036-0

Title: Influence of gas environment on synthesis of silicon carbide through reaction between silicon and amorphous carbon in a solar furnace at PSA (Plataforma Solar de Almeria)
Author(s): Fernandes, JC; Rosa, LG; Martinez, D; et al.
Source: Journal of the Ceramic Society of Japan Volume: 106 Issue: 8 Pages: 839-841 Published: 1998
URL: [https://dspace.ist.utl.pt/bitstream/2295/380295/4/jceramsoc_of_japan_106_\(1998\).pdf](https://dspace.ist.utl.pt/bitstream/2295/380295/4/jceramsoc_of_japan_106_(1998).pdf)

- Research line: ORNAMENTAL AND ENGINEERED STONES (CHARACTERIZATION AND PROCESSING)

Title: Long-term performance of stone-cutting tools

Author(s): Rosa LG, Fernandes JC, Anjinho CA, Coelho A, Amaral PM

Source: International Journal of Refractory Metals and Hard Materials

Volume: 49 Pages: 276-282 Published: March 2015

DOI:10.1016/j.ijrmhm.2014.05.021

Title: Implications of exposure to high temperatures for stone cladding requirements of three Portuguese granites regarding the use of dowel-hole anchoring systems

Author(s): Pires V, Rosa LG, Dionisio A

Source: Construction and Building Materials Volume: 64 Pages: 440-450 Published: AUG 2014

DOI: 10.1016/j.conbuildmat.2014.03.035

Title: A New Laboratory Methodology for Assessing the Cutting Behaviour of Gangsawing Blades

Author(s): Anjinho CA, Amaral PM, Fernandes JC, Rosa LG

Source: Key Engineering Materials Volume: 548 Pages: 72-81 Published: 2013

DOI: 10.4028/www.scientific.net/KEM.548.72

Title: Comparison between Cobalt and Niobium as a Matrix Component for Diamond Impregnated Tools used for Stone Cutting

Author(s): de Oliveira HCP, Coelho A, Amaral PM, Fernandes JC, Rosa LG

Source: Key Engineering Materials Volume: 548 Pages: 98-105 Published: 2013

DOI: 10.4028/www.scientific.net/KEM.548.98

Title: Optimisation of Circular Sawing Conditions to Maximize Tool Productivity for each Class of Material

Author(s): Pereira JC, Amaral PM, Coelho A, Tavares A, Fernandes JC, Rosa LG

Source: Key Engineering Materials Volume: 548 Pages: 106-114 Published: 2013

DOI: 10.4028/www.scientific.net/KEM.548.106

Title: Comparison of Young's Moduli of Engineered Stones using Different Test Methods

Author(s): dos Santos JPL, Amaral PM, Diogo AC, Rosa LG

Source: Key Engineering Materials Volume: 548 Pages: 220-230 Published: 2013

DOI: 10.4028/www.scientific.net/KEM.548.220

Title: Finite Element Model Development Applied to Portuguese Granites for Contact Analysis of two Dowel Fixing Conditions used in Cladding

Author(s): Pires VC, Pacheco A, Infante V, Amaral PM, Rosa LG

Source: Key Engineering Materials Volume: 548 Pages: 255-266 Published: 2013

DOI: 10.4028/www.scientific.net/KEM.548.255

Title: Flexural and anchorage strength considerations for slate cladding design

Author(s): Pires VC, Amaral PM, Rosa LG, Camposinhos RS

Source: Construction and Building Materials Volume: 25 Issue: 10 Pages: 3966-3971 Published: OCT 2011

DOI: 10.1016/j.conbuildmat.2011.04.029

Title: Temperature effects on mechanical behaviour of engineered stones

Author(s): dos Santos JPL, Rosa LG, Amaral PM

Source: Construction and Building Materials Volume: 25 Issue: 1 Pages: 171-174 Published: JAN 2011

DOI: 10.1016/j.conbuildmat.2010.06.042

Title: 3D-FEM Simulation and Design Optimization of the Diamond Cutting Tools under Various Loading Conditions

Author(s): Li B, Amaral PM, Reis L, Anjinho CA, Rosa LG, de Freitas M

Source: Materials Science Forum Volume: 636-637 Pages: 1131-1136 Published: 2010

DOI: 10.4028/www.scientific.net/MSF.636-637.1131

Title: 3D-modelling of the local plastic deformation and residual stresses of PM diamond-metal matrix composites

Author(s): Li B, Amaral PM, Reis L, Anjinho CA, Rosa LG, de Freitas M

Source: Computational Materials Science Volume: 47 Issue: 4 Pages: 1023-1030 Published: 2010

DOI: 10.1016/j.commatsci.2009.12.001

Title: Analysis of Strength Scaling Effect in Portuguese Limestone: Comparison between Three- and Four-point Bending Tests

Author(s): Fernandes JC, Pires V, Amaral PM, Rosa LG

Source: Materials Science Forum Volume: 636-637 Pages: 1336-1341 Published: 2010

DOI: 10.4028/www.scientific.net/MSF.636-637.1336

Title: Evaluation of the Relationship between Diamond Tool Wear Performance and the Mechanical Properties of the Individual Metallic Binders

Author(s): Amaral PM, Coelho A, Anjinho CA, Fernandes JC, Rosa LG

Source: Materials Science Forum Volume: 636-637 Pages: 1467-1474 Published: 2010

DOI: 10.4028/www.scientific.net/MSF.636-637.1467

Title: Study of Aggregate Size Effect on Fracture Toughness of Petreous Macrocomposites (Concrete)

Author(s): Marques AS, Amaral PM, Rosa LG, Fernandes JC

Source: Materials Science Forum Volume: 636-637 Pages: 1342-1348 Published: 2010

DOI: 10.4028/www.scientific.net/MSF.636-637.1342

Title: Wear mechanisms in materials with granitic textures-Applicability of a lateral crack system model

Author(s): Amaral PM, Fernandes JC, Rosa, LG

Source: Wear Volume: 266 Issue: 7-8 Pages: 753-764 Published: 2009

DOI: 10.1016/j.wear.2008.08.018

Title: Assessment of fracture toughness in ornamental stones

Author(s): Amaral PM, Rosa LG, Fernandes, JC

Source: International Journal of Rock Mechanics and Mining Sciences Volume: 45 Issue: 4 Pages: 554-563 Published: 2008

DOI: 10.1016/j.ijrmms.2007.05.009

Title: Development of a New Testing Method for Assessing the Wear Behaviour of Circular Cutting Discs

Author(s): Fernandes JC, Pinto S, Rodrigues R, Amaral PM, Rosa LG

Source: Materials Science Forum Volume: 587-588 Pages: 966-970 Published: 2008

DOI: 10.4028/www.scientific.net/MSF.587-588.966

Title: Evaluation of the residual stresses due to the sintering process of diamond-metal matrix hot-pressed tools

Author(s): Reis L, Amaral PM, Li B, Freitas M, Rosa LG

Source: Theoretical and Applied Fracture Mechanics Volume: 49 Issue: 2 Pages: 226-231 Published: 2008

DOI: 10.1016/j.tafmec.2007.11.007

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11. Languages

Language	Reading	Writing	Conversation
English	Very good	Very good	Very good
French	Very good	Good	Good
Spanish	Very good	Good	Good
Portuguese	Very good	Very good	Very good