

**Please refer to the Italian version of the present
announcement as the official one (D. R. n. 357 del 25/07/2016)**

**UNIVERSITY OF UDINE
RECTORAL DECREE**

RE: public selection procedure for recruiting a fixed-term researcher for the Polytechnic Department of Engineering and Architecture – Competitive sector 09/D1 Science and Technology of Materials, pursuant to art. 24, clause 3, letter a) of Law n. 240 of 30.12.2010

THE RECTOR

in consideration of

- Law n. 241 of 7 August 1990 regarding the new norms governing access to administrative documents and subsequent amendments and additions;

and of

- Law n. 125 of 10 April 1991 concerning "positive action for the creation of equality between men and women in the workplace";

and of

- the Sole Text of legislative and regulation dispositions regarding administrative documentation, enacted with Presidential Decree n. 445 of 28 December 2000, published in the Official Gazette n. 30 on 20.02.2001 and subsequent amendments;

and of

- the decree law of 21 June 2013, n. 69, converted into Law August 9, 2013, n. 98, concerning "Urgent provisions for economic recovery", and in particular art. 42, paragraph 1, point d) repealing the provisions relating to the requirement of a certificate of physical fitness in order to be employed in the public sector;

and of

- the resolution by the Board of Governors on 28 November 2002 that established that the candidate should partly refund the secretarial expenses, determining the amount thereof;

and of

- the resolution by the University Senate on 12 January 2005 concerning "Competition procedures: return of documentation";

and of

- Law n. 240 of 30.12.2010 art. 24 and subsequent amendments and additions;

and of

- the Ministerial Decree n. 242/2011 concerning "Criteria and parameters for evaluating didactic activity and research carried out by holders of contracts pursuant to art. 24 clause 3 letter a) of Law 240/2010";

and of

- the Ministerial Decree n. 243/2011 concerning "Criteria and parameters recognized, also internationally, for the preliminary assessment of candidates awarded contracts pursuant to art 24 of Law 240/2010";

and of

- the Regulations for fixed-term researchers (pursuant to Law n. 240 of 30.12.2010), issued with Rectoral Decree n. 310 on 11.07.2012;

and of

-the Ministerial Decree n. 855/2015 concerning "the reassessment of macro and competition sectors";

and of

- the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers;

and of

-the deliberation of the Polytechnic Department of Engineering and Architecture dated 04/05/2016 with which requires the opening procedure for the recruitment of a temporary researcher, pursuant to art. 24, paragraph 3, letter a) of Law 240/10, for the duration of three years, for the competition sector 09/D1 Science and Technology of Materials;

and of

-the deliberation of the Polytechnic Department of Engineering and Architecture mentioned above provides a possible extension, only one time, for an additional two years, after a positive evaluation of the teaching and research activities and depending on any possible future and sufficient funding to cover the additional two years;

and of

- the authorizations of the University Senate on 28/06/2016 and the Board of Governors on 30/06/2016; having ascertained
- the need to fill the post by immediately issuing the announcement,

HEREBY DECREES

Article 1

A public selection is hereby announced, by means of a comparative assessment, to recruit a fixed-term researcher pursuant to art. 24 clause 3 letter a) of Law n. 240 of 30.12.2010, based on the following specifications:

Polytechnic Department of Engineering and Architecture Competitive sector 09/D1 Science and Technology of Materials

Profile: Scientific-disciplinary sector ING-IND/22 Science and Technology of Materials

Duration of contract: three years, extendible for two years only and once only, conditional on the finding of suitable funding in the future to cover the other two years and a positive assessment of the didactic activities and research carried out

Conditions: full time, with 350 hours for didactic activities, additional didactics and services to students

Research Project:

Innovative galvanic surface coatings and Materials Engineering

The research project is aimed to the development, characterization and optimization of new functional coatings obtained by using several deposition technologies such the galvanic ones or alternatively thermal spray or by vapour deposition. The innovative galvanic coatings both nanometric or micrometric will be studied through microstructural characterization by using the electron scanning microscope (SEM – EDXS), the GDOES profilometry as well as by the atomic force microscope (AFM). The chemical and microstructural characterization will allow a first optimization of the deposition parameters. A second step of the project will involve the evaluation of the functional properties of the produced coatings. Among these a particular attention will be devoted to: corrosion resistance in wet environments, wear and fretting resistance in chemical and biological environments too, thermal barrier properties, and the high temperature mechanical properties. The project will last three years with the possibility of a two more years renewal (see Annex E)

Duration of the research programme: three years

Professor responsible: Prof. Lorenzo Fedrizzi, University Full Professor at the University of Udine – competitive sector 09/D1– scientific-disciplinary sector ING-IND/22

Specific functions and objectives allocated:

In the field of functional coatings for mechanical and anti-corrosion applications, the researcher has to develop innovative galvanic coatings in collaboration with companies and industries, and possibly by the formulation of new coatings produced first at a laboratory scale and then developed via an industrial “scaling up”. Main aim of the researcher will be the microstructural characterization of the produced new materials with specific competencies in the field of the surface analysis. The characterization of the functional properties such as corrosion and wear resistance will also be a main aim of the researcher.

Didactic activities, additional didactics and services to students:

didactic activity in the field of disciplines which are part of the SSD ING-IND/22 will last 60 hours per year with special attention to all material classes such as metallic, ceramic, polymeric and composite. Special care will be dedicated to the following courses: Science and Technology of Composite Materials, Materials for Energy and Environment, Science and Technology of Polymeric Materials. The didactic activity will possibly include seminars inside activated courses and students tutoring for thesis development.

Workplace:

The research activity will be mainly carried out at the University of Udine Department of Chemistry, Physics and Environment / Polytechnic Department of Engineering and Architecture. The researcher could also carry

out part of the research activity by research partner institutions such as Friuli Innovazione or others, on the base of specific research needs for all the project duration.

Maximum number of publications to be presented: fifteen

Language required for the oral examination: English

Article 2

Requirements for admission to the comparative assessment

The procedure is open to Italian and foreign citizens having the following qualification in the appropriate field of study and research:

- Ph.D. or equivalent;

Pursuant to art. 6 , clause 2, of the University Regulations the following are also required:

What is especially asked for is previous experience in the area of metallic materials, the analysis of surfaces, a knowledge of corrosion, as well as the implementation, production, and development of galvanized coverings.

The adjudicating commission shall evaluate the above requirements.

The following categories are excluded from the comparative assessment:

- full and associate professors and researchers with permanent positions in Italian Universities, even if they have retired;
- those who have already had contracts with research grants and fixed-term researchers pursuant to arts. 22 and 24 of Law 240/2010 at the University of Udine or other Italian Universities, state-run or not, or on-line, and also those Bodies pursuant to clause 1 art. 22 of Law 240/2010, for a period which, added to the overall duration of three years envisaged for the contract announced, exceeds a total of 12 years, even if not continuously. For the purposes of the duration of such relationships, any periods spent on maternity leave, or for health reasons according to current legislation, shall not be considered;
- those who have any degree of family relationship or affinity, up to the fourth degree, or are connected by marriage, with a professor or permanent researcher belonging to the Department proposing to issue the contract (<http://www.uniud.it/cercapersone.htm?struttura=107403>) or with the Rector, the Administrative Director or any component of the University Board of Governors (<http://www.uniud.it/ateneo/organizzazione/organi/composizione.htm>);
- those who are excluded from civil and political rights;
- those who have been dismissed or dispensed from a position at a Public Administration due to a persistent unsatisfactory performance;
- those who have been dismissed from another State position pursuant to art. 127 letter d) of Presidential Decree n. 3 of 10/1/1957.

The requirements must be possessed on the date when the deadline for presenting the application for admission to the procedure expires.

Candidates are admitted to the comparative assessment only conditionally, and exclusion from the procedure due to a lack of the requirements is decided by a justified decree by the Rector, and notified to the candidate concerned.

The Administration guarantees equality and equal opportunities to men and women for access to and treatment in the workplace.

Article 3

Application for admission

Application for admission to the comparative assessment must necessarily be drawn up following the outline shown in attachment "A" for Italian candidates and attachment "B" for foreign candidates, which must be filled in in every part and signed by the candidate, otherwise the candidate will be excluded.

The application must be addressed to the University of Udine – Area Organizzazione e Personale – Ufficio Concorsi – Via Palladio 8, 33100 Udine.

The application must be presented within the established, non-extendible deadline, that is, within 30 days from the day following the publication of the announcement in the Official Gazette of the Republic of Italy. Otherwise the candidate will be excluded. If the deadline expires on a holiday, it is postponed to the first working day thereafter.

The options for presenting the application are as follows:

- hand in to the protocol Office (Ufficio Protocollo) (from Monday to Friday 9.00 – 11.30);

- send by registered post with notification of receipt within the established deadline. For this purpose the date of the post mark of the Post Office that accepts the application shall be the accepted date.
- send by Italian mailbox "Posta Elettronica Certificata (PEC) to the address amce.postacert.uniud.it. The application and all the attachments are to be signed with a digital signature or a scanned written signature accompanied by a copy of the identity card in PDF/A or Adobe PDF format. In case of a scanned written signature the mailbox of the electronic PEC will be that of the applicant.

The candidate who sends documentation via PEC need not subsequently send documents on paper.

Any application transmitted by a non-certified electronic mail address, or not in conformity with the dispositions of this clause, shall not be considered.

All publications must be numbered and the title of each file containing publications must include the relative enumeration of the documents and preferably not exceed 30 characters.

The maximum size supported by PEC is 20 MB. If the applicant wishes to present a number of attachments which exceeds that limit, he/she will have to submit the application with a first dispatch, enclosing a message to specify that part or all of the attachments will follow in successive dispatch(es), always before the deadline for the submission of the application. Each Certified Mail must include reference to the competition procedure.

The University Administration declines all responsibility if the files sent by PEC are illegible.

Any candidate recognized as disabled must specify in the application any equipment needed for his/her disability, pursuant to Law n. 104 of 05/02/1992.

Candidates are required to pay a contribution of €20 to the bank account n. 000040469443 (ABI 02008 CAB 12310 CIN R IBAN IT23R0200812310000040469443 BIC UNCRITM1UN6) at UNICREDIT BANCA Spa - Udine, in the name of the University of Udine, and must indicate as cause of payment: "Contribution for selection – Competition sector ...".

The receipt of payment must be attached with the application.

The University Administration declines all responsibility if the candidate cannot be found and if communications are lost, due to an inexact indication of the address by the candidate, or due to a late communication, or non-communication, of any change in address as indicated in the application. The University Administration also declines all responsibility for any late delivery, or non-delivery, of communications relating to the competition for reasons not imputable through gross negligence to the Administration but to postal or data transmission errors, to third parties, to fortuitous events or to force majeure.

The documents attached to this application will be evaluated in accordance with art. 7 of the notice.

The documents attached to the application takes into account the elements of the assessment as listed in Art. 7 of the notice ("Evaluation").

The candidate must attach with the application:

- 1) photocopy of ID;
- 2) photocopy of Tax Code;
- 3) curriculum drawn up according to attachment "D", signed by the candidate and with the following attachments:
 - a) list of qualifications;
 - b) list of scientific publications to his/her name;
 - c) list of scientific publications presented for the selection process (within the maximum number of fifteen as established by art. 1 of the announcement);
 - 4) documents and qualifications that the candidate considers useful for the purposes of the selection;
 - 5) publications point 3) letter c) that the candidate considers useful for the purposes of the selection (within the maximum number of fifteen as established by art. 1 of the announcement);
 - 6) receipt of payment of €20.

If the application is sent in paper form, the application, documents, qualifications and publications are to be placed also on an optical or electronic storage medium, e.g. a CD or a USB stick, in PDF/A or Adobe PDF format. The applicant shall vouch, on his own responsibility, that this corresponds to the paper documentation.

It is not allowed to present attachments to the application in the form of links to files residing on "storage/online file sharing services" or Web pages.

The documents coming from abroad by foreign authorities must be legalized by the Italian diplomatic or consular representatives abroad and, if written in a foreign language, endorsed with a certified translation into Italian of the foreign text by the competent diplomatic or consular office or by an official translator.

Italian and EU citizens may:

- send the original qualifications, authenticated copies (also in PDF/A or Adobe PDF format) or copies declared in conformity with the original with a substitute declaration pursuant to arts. 46 and 47 of the Presidential Decree 445/2000, completing attachment C;
- otherwise, a substitute certification declaration or affidavit may be sent, completing the curriculum in conformity with attachment D.

Non-EU citizens authorized to stay in Italy pursuant to current norms, may use substitute declarations pursuant to arts. 46 and 47 of the Presidential Decree 445/2000, but only to the extent that they are used to prove conditions, facts and personal qualities that can be certified or attested by Italian public bodies.

Non-EU citizens not authorized to stay in Italy must document conditions, facts and personal qualities using certificates or statements issued by the competent authority of the foreign State.

Such documents must be legalized by the Italian diplomatic or consular delegations abroad: if written in a foreign language, they must also have the Italian translation, certified as being in conformity with the foreign text, by the competent diplomatic or consular delegation or by an official translator.

If the subject of the substitute declaration is not well identified in its nature, duration, temporal placement and body concerned, then the adjudicating commission may not take it into account.

Pursuant to the dispositions of art. 15 of Law n. 183 of 12.11.2011, the Administration does not accept certificates issued by Italian Public Administrations with regards to status, personal qualities and facts: these must always be substituted by substitute certification declarations or affidavits pursuant to arts. 46 and 47 of the Presidential Decree 445/2000.

It is not allowed to make reference in the present application to documents or publications already presented to this or other Administrations, or to documents and publications already enclosed to a different application for a different competition.

Applications that do not arrive within the deadline established by the announcement will not be taken into consideration, and no additional documentation will be admitted.

Article 4 Publications

The candidate produces his/her publications, maximum fifteen as established by art. 1 of the announcement, including the Ph.D. thesis, in the original copy or declaring that the copy is in conformity (also in PDF/A or Adobe PDF format) using a substitute declaration of the affidavit, completing attachment "C".

The publications must include the date and place of publication.

Only publications or texts accepted for publication according to current norms will be taken into consideration, plus essays contained in miscellaneous works and articles in journals in paper or digital form, excluding internal notes or departmental reports. The Ph.D. thesis or equivalent qualifications will be taken into consideration even if the conditions as per the present clause are not met.

For works printed in Italy the filing requirements pursuant to Law n. 106 of 14.4.2004 must be respected, and the fact must be certified by suitable documentation or by a substitute declaration (attachment C) to be attached with the application.

If the candidate presents a greater number of publications as those required, the adjudicating commission will make an assessment of them the same equal in number to the limit as mentioned above, taking into account the most recent as the publication date.

Article 5

Withdrawal from procedure

The candidate wishing to withdraw will have to complete a withdrawal form, signed and dated, to be promptly transmitted to the University of Udine by Italian "Posta Elettronica Certificata" (PEC) (amce@postacert.uniud.it) or faxed to Area Organizzazione e Personale (n. fax +39-432 556339) enclosing a photocopy of a valid ID.

Article 6

Adjudicating Commission

The adjudicating commission is nominated by the Rector on the suggestion of the Department who has asked for the place to be filled, following deliberation by the Department Board.

If the candidates have any objection to one or more of the members of the adjudicating Commission, these must be made to the Rector within the non-extendible deadline of thirty days from the publication of the decree on the online notice board of the University.

Any details will also be made available on the site:

<http://www.uniud.it/it/ateneo-uniud/concorsi-bandi-uniud/bandi-docenti-ricercatori/ricercatori-tempo-determinato-uniud>

Article 7

Evaluation

The candidate is selected by means of a preliminary evaluation of the candidates with a reasoned and analytical assessment of the qualifications, curriculum and scientific production, including the Ph.D. thesis.

The adjudicating commission shall make a reasoned evaluation following a comparative assessment, with reference to the specific competition sector and the profile indicated in art. 1, of the curriculum and the following qualifications, duly documented, of the candidate:

- a) Ph.D. or equivalent, or, for the fields concerned, medical specialization diploma or equivalent, obtained in Italy or abroad;
- b) any didactic activities at University level, in Italy or abroad;
- c) documented activity in training or research at qualified Italian or foreign institutions;
- d) documented activity in the clinical field related to the competition sectors in which such specific competences are required;
- e) planning activities related to the competition sectors in which such activities are envisaged;
- f) organization, management and coordination of national and international research groups, or participation in such groups;
- g) ownership of patents related to the competition sectors in which it is envisaged;
- h) speaker at national and international conferences and conventions;
- i) national and international prizes and awards for research;
- j) European specialization diploma recognized by international Boards, related to the competition sectors in which it is envisaged.

Each qualification is evaluated by specifically considering the significance that it has with regard to the quality and quantity of the research carried out by the individual candidate.

The adjudicating commission shall make the comparative assessment of the publications as per art. 4 based on the following criteria:

- a) originality, innovation, methodological rigour and relevance of each scientific publication;
- b) congruency of each publication with the competition sector for which the process is announced and with the profile indicated in art. 1, or with inter-disciplinary themes connected thereto;
- c) scientific relevance of the editorial location of each publication and its diffusion inside the scientific community;
- d) analytical determination, also based on criteria recognized in the relative international scientific community, of the individual contribution of the candidate if he/she participates in collaborative work.

The adjudicating commission shall also evaluate the overall consistency of the candidate's scientific production, its intensity and continuity over time, taking into account any periods, properly documented, which the candidate involuntarily spent away from research, with particular reference to parenting.

Within the framework of the competition sectors where there is a consolidated use thereof at an international level, when assessing the publications the commission shall also make use of the following indicators, referred to the deadline for the candidature:

- a) total number of citations;
- b) average number of citations per publication;
- c) total impact factor;
- d) average impact factor per publication;
- e) combination of the previous parameters able to optimize the impact of the candidate's scientific production (Hirsch index or similar).

The adjudicating Commission, in respect of current norms concerning author's rights, shall use the publications presented by the candidate exclusively for reasons of the present application.

Following the preliminary assessment, between 10 and 20 percent of the comparatively most meritorious candidates, and in any case no fewer than six, shall be admitted to the public discussion with the commission of their qualifications and scientific production; the candidates shall all be admitted to the discussion if there are six or fewer candidates.

The result of the preliminary assessment will be published on the University on-line noticeboard, and the University website.

Simultaneously with the discussion of the qualifications and publications, with a suitable oral test, an adequate knowledge of the English language is verified.

After the discussion, points are awarded to the qualifications and to each of the publications presented by the candidates admitted.

The maximum number of points that can be awarded for qualifications and publications is 100, subdivided as follows:

- qualifications 50 points
- publications 50 points

Candidates must present themselves for the discussion with a valid ID or equivalent document pursuant to art. 35 clause 2 of Presidential Decree 445/2000.

Candidates admitted to the discussion shall be notified by registered letter (with notification of receipt) not less than twenty days before the day of the discussion.

The date of the discussion will be published on the site:

<http://www.uniud.it/it/ateneo-uniud/concorsi-bandi-uniud/bandi-docenti-ricercatori/ricercatori-tempo-determinato-uniud>

Any candidate summoned who does not present himself/herself for the discussion will be deemed to have explicitly and definitively renounced his/her participation in the selection.

At the end of their deliberations, the adjudicating commission, based on the points awarded to the qualifications and publications, declare the winning candidate and draw up the classification.

Article 8 Validity of the records

The records of the adjudicating commission consist of the minutes of the meetings and the attachments thereto, the final classification and the report summarizing the work performed.

Within thirty days of the records being handed in, and after verifying that the procedure was correctly carried out, the Rector approves the records with a decree. Otherwise, the Rector shall return the papers to the adjudicating commission, at the same time assigning to it a deadline to regularize them.

The decree approving the records, the final report and the final classification will be made public on the University's on-line noticeboard and web site.

Within sixty days of the records being approved, the Department shall formulate the proposal to call the successful candidate, upon a favourable vote by the absolute majority of full and associate professors, which must be approved by a decision of the Board of Governors.

Article 9 Return of documents and publications

Documents and publications attached to the application will be returned by post to those candidates who so request, 180 days after the publication of the decree approving the records and within the following 30 days. Publications presented as originals for which no request for return is made shall be sent to the Inter-Departmental Libraries Center, to further increase the University book stocks.

All the remaining documentation shall be eliminated according to legal norms.

The candidate must indicate, when he/she applies, whether he/she wishes the documentation to be

returned.

Article 10

Documents required for drawing up the contract

The successful candidate is called by the Rector.

If he/she is an Italian or other EU citizen, the successful candidate must send the following documentation within the deadline established by the Administration, otherwise the appointment shall lapse:

- 1) Declaration pursuant to Presidential Decree 445/2000, attesting:
 - a) that the candidate was in possession of his/her civil and political rights on the expiry date of the announcement;
 - b) any lawsuits pending on the expiry date of the announcement;
 - c) family unit;
 - d) that he/she has no other positions working for the State, local Bodies, other public administrations or private bodies or, otherwise, that he/she opts for the new position.

For the whole duration of the contract the researcher, if employed by State administrations, shall be put on leave without pay or national insurance contributions, or taken off the permanent staff if such position is envisaged by the regulations of the employing structure.

If not an EU citizen, the researcher must present the following documents, within the deadline established by the Administration and according to the provisions of clauses 2, 3 and 4 of art. 3 of Presidential Decree 445/2000, otherwise the appointment lapses:

- 1) Birth certificate.
- 2) Certificate equivalent to the general certificate of the judicial register issued by the competent Authority of the State where the foreign candidate is a citizen. If normally living in Italy pursuant to art. 3 of Presidential Decree 445/2000, as well as the above certificate, the foreign candidate must also self-certify that he/she has no penal convictions or pending charges.
- 3) Certificate of nationality.
- 4) Certificate attesting that the candidate was in possession of his/her civil and political rights on the expiry date of the announcement.

Documents as per 2), 3) and 4) must be dated no earlier than six months from the date the result of the competition was published.

Certificates issued by the competent Authorities of the State where the researcher is a citizen must be legalized by the Italian diplomatic or consular delegations abroad; if written in a foreign language, they must also have the Italian translation, certified as being in conformity with the foreign text, by the competent diplomatic or consular delegation or by an official translator.

Article 11

Contract of work

The Rector shall enter into a fixed-term contract of work with the successful candidate.

The introduction of the work contract shall in any case respect the limits established by current legislation in terms of the employment of personnel.

The researcher shall provide the services as per art. 1 of the announcement.

The contract shall last three years, extendible for two years only and once only, conditional on the finding of suitable funding in the future to cover the other two years and a positive assessment of the didactic activities and research carried out.

Annual gross remuneration: € 34,898.06, corresponding to the initial salary of a confirmed full-time researcher.

The overall number of hours for didactic activities, additional didactics and services to students is 350 hours.

There is a probationary period of three months, during which each of the Parties may terminate the contract at any time with no notice, effective immediately upon communication to the other Party.

The researcher shall perform his activities in the place indicated in art. 1 of the announcement. He/she shall perform his activities according to the provisions of the contract and the programming of the competent bodies. The research shall be carried out under the direction of the person responsible for the research project.

The researcher shall respect the internal regulations concerning the protection of intellectual and industrial

property and confidentiality, and also the directives issued by the scientific director concerning the diffusion of knowledge and know-how acquired during his activities.

The research must be self-certified every year by report and then validated by the person responsible for the research project or, if not available, by the Departmental Director. For the purposes of presenting the financial statement for research projects, the researcher's annual activities, including research, study and teaching, with the connected preparation, testing and organization, amount to 1500 hours per annum.

Direct teaching and other activities connected to teaching shall be certified by the class register and the register of didactic commitments.

The researcher shall undergo the health checks provided by Legislative Decree 81/2008 and subsequent amendments.

The researcher is subject to the disciplinary competence of the Commission pursuant to art. 10 of Law 240/2010.

The dispositions of the University Statute shall also be applied to the researcher, including those concerning the possibility of voting and standing for election in the University bodies.

The researcher's work relationship is disciplined by current dispositions regarding subordinate work, including those concerning tax deductions and welfare and national health contributions for the employed.

According to the programming resources available, the Department may, with the researcher's consent and in the six months prior to the expiry of the contract, propose an extension thereof, for once only and for two years only, justifying said extension with reference to didactic and research requirements.

The researcher's teaching and research shall be evaluated by a suitable commission appointed by the Rector, based on a report prepared by the Department.

If the assessment is positive, the proposed extension is subject to approval by the Board of Governors within the deadline of the contract to be extended.

The work relationship shall terminate when the contract expires or if one of the Parties withdraws.

The researcher may withdraw from the contract by giving the University a sixty-day notice. In the absence of such notice, the University has the right to withhold from the researcher an amount corresponding to the remuneration for the period of notice not given.

If there is a cause that prevents the relationship from continuing, even provisionally, withdrawal for a just cause is allowed, pursuant to art. 2119 of the Civil Code.

A fixed-term researcher's contract is incompatible with:

- participation in a Ph.D. Programme;
- award of a research grant;
- award of scholarships or research scholarships and similar fixed-term contracts already entered into with Udine or other Universities;
- practice of trade and industry;
- private practice;
- any other subordinate work relationship with public or private bodies.

The researcher is allowed to carry out other temporary teaching posts for payment, and other jobs conferred by third parties if authorized by the Rector following a written opinion given by the Departmental Director, provided that these do not entail any conflict of interest with the University and are compatible with the proper performance of the research according to the contract.

The contract does not give any right regarding access to tenured positions at the University.

Article 12

Processing of personal data

Pursuant to art. 13 of Legislative Decree 196/2003, candidates are informed that the data contained in the applications is processed for the purposes of managing the selection procedure, a possible drawing up of the subordinate work contract and of managing the subsequent relationship with the University. The data will be processed by computer and using paper archives for the relative records. The information may be communicated only to the public Administrations directly involved in the juridical and economic position of the researcher.

Candidates are reminded that it is obligatory to provide the data requested and should this be refused, the candidate shall not be admitted to the procedure.

Candidates enjoy all the rights pursuant to art. 7 of Legislative Decree 196/2003.

The Holder of the processing rights is Prof. Alberto Felice De Toni, Rector of the University of Udine.

The person in charge of processing is Ms. Angela Iuretigh, Head of Organization and Personnel.

Article 13
Responsibility for the method

The person responsible for the method used in the public selection is Ms. Silvia De Liddo - Organization and Personnel.

Article 14
Publication

The present announcement is published on the University website at the following address: <http://www.uniud.it/it/ateneo-uniud/concorsi-bandi-uniud/bandi-docenti-ricercatori/ricercatori-tempo-determinato-uniud> and on those of the Ministry of Education, Universities and Research and of the European Union.

The announcement is published in the Official Gazette of the Republic of Italy.

Article 15
Final dispositions

For any other matters not established by this announcement, the following laws shall be applied: Law n. 240 of 30.12.2010, the decrees of the Ministry of Education, Universities and Research n. 242 of 24.05.2011 and n. 243 of 25.05.2011, published in the Official Gazette n. 220 of 21.09.2011, and the Regulations for fixed-term researchers enacted with Rectoral Decree n. 310 of 11.07.2012.

THE RECTOR
Prof. Alberto Felice De Toni

Title

Innovative galvanic surface coatings and Materials Engineering

Project description

The strong collaboration between UNIUD and some major players operating in the material and mechanical field is promoting this research project mainly dealing with the innovation and optimization of some industrial processes aiming to guarantee and increase the final product quality. One of the main objects of the project is to strengthen the partnership between UNIUD and local companies working in the mechanical and materials transformation areas, both at national or international level, creating and developing in the meantime a new and strong knowledge in the material science area.

The first aim of the project is to control and minimize degradation phenomena such as wear, corrosion and oxidation both at room or high working temperature that can occur in many production plants during several metal transformation processes. As an example in steelmaking plants are present a lot of issues related to degradation problems on used components, caused mainly by oxidation/corrosion phenomena at high temperature, wear and wet corrosion. Nowadays, the surface engineering science is considered as the science that could increase the service life of plant components using innovative coatings. The main components undergoing severe degradation are the copper moulds of the continuous casting plants and the rolling rolls for both cold and hot rolling of the steel. These components are subjected to wet corrosion problems at room temperature, in the water cooled systems, and hot corrosion /oxidation problems combined with high wear that decrease the service life of it.

The continuous casting moulds are subjected to various degradation problems such as: wear at the bottom of the mould where the solidified steel comes out, or hot corrosion from molten steel or salts in the steel meniscus region. The most used coatings for this application are electrodeposits (pure metals, alloys or composite deposits) or thermal spray coatings. The hot rolling rolls are subjected mainly to hot wear degradation, thermomechanical fatigue and oxidation at high temperature. In this case the degradation of the components could be decreased adopting PVD coatings or thermal spray coatings in order to protect the underneath material.

The project is divided in four different phases:

A preliminary bibliographic research

Development and optimization of galvanic innovative coatings production process and the characterization of the obtained deposits.

Durability testing

Industrial scaling up

The preliminary phase of bibliographic research and failure analysis of the failed components is fundamental in order to better understand the degradation mechanisms.

The second phase is related to the development of innovative galvanic coatings which could be produced at a laboratory scale using the UNIUD facilities or by collaborations with some industrial partners, leader in the field of functional coatings deposition. The galvanic deposition is a well-consolidated technique which allow to obtain metallic, wear and corrosion resistant coatings such as, for example, Ni or Cr with a low production cost. In the last years different studies have been performed for the production and characterization of wear resistant innovative coatings obtained by galvanic deposition such as composite metal matrix coatings containing hard either micro- o nano-particles or metal alloy deposits such as Ni/Co, Ni/B or Ni/Cr. The proposed study aims to the production of innovative coatings produced mainly by electrodeposition with high wear and corrosion resistance at high temperature. The produced deposits will be analysed by microscopic techniques and GDOES in order to evaluate the influence of the process parameters on the microstructure and chemical composition of the deposits. The obtained results will be used as a continuous feedback in order to optimize the deposition process parameters. The optimization of the deposits functional properties will be performed through microstructural characterization and durability tests. During the step of the durability testing the experimental parameters will be optimized in order to better simulate the working conditions of the plant component. The produced coatings will be tested regarding their performances at high temperature and under high wear loads and compared to the alternatives offered by the market. The solutions offering the best protection against corrosion and wear will be selected based on the results of the durability tests.

The last step consists in the industrial scaling-up of the production processes developed in laboratory or semi-industrial scale, using the production plants available in the University facilities, to industrial partners, leader in the field of the galvanic deposition. During this step, the developed coatings will be deposited on copper moulds or rolling rolls and tested in real service conditions.