



## DECRETO RETTORALE N. 5399

Bando di concorso per l'ammissione a n. 5 posti per il corso di Dottorato internazionale  
in Science presso l'Università Cattolica del Sacro Cuore  
ciclo XXXV – sede di Brescia

### IL RETTORE

- Visto lo Statuto dell'Università Cattolica del Sacro Cuore, emanato con decreto rettorale 24 ottobre 1996, e successive modifiche e integrazioni;
- visto il regolamento generale di Ateneo dell'Università Cattolica del Sacro Cuore, emanato con decreto rettorale 26 ottobre 1999, e successive modifiche e integrazioni;
- vista la legge 5 febbraio 1992, n. 104;
- visto il d.p.r. 9 maggio 1994, n. 487;
- visto il d.m. 22 ottobre 2004, n. 270;
- vista la legge 30 dicembre 2010, n. 240, in particolare l'art. 19;
- visto il decreto ministeriale n. 45 dell'8 febbraio 2013;
- vista la nota del Ministero dell'Istruzione, dell'Università e della Ricerca, prot. n. 3315 del 1° febbraio 2019, avente ad oggetto le linee guida per l'accREDITAMENTO dei corsi di dottorato;
- viste le procedure per l'ingresso, il soggiorno e l'immatricolazione degli studenti stranieri/internazionali ai corsi di formazione superiore in Italia per l'anno accademico 2019-2020, dettate dalla Direzione generale per lo studente, lo sviluppo e l'internazionalizzazione della formazione superiore;
- visto il Regolamento UE 2016/679 in materia di protezione dei dati personali (*General Data Protection Regulation*), pubblicato sulla Gazzetta Ufficiale Europea del 4 maggio 2016;
- visto l'accordo per il corso di Dottorato internazionale in *Science* tra l'Università Cattolica del Sacro Cuore, la Katholieke Universiteit Leuven (Belgium), la Pontificia Universidad Católica de Chile Santiago (Chile) e l'University of Notre Dame du Lac - Notre Dame, Indiana (USA), datato 12 maggio 2016;
- visto il proprio decreto n. 3627 del 12 luglio 2017, recante: <<Modifiche al "Regolamento dei corsi di dottorato di ricerca e delle scuole di dottorato di ricerca dell'Università Cattolica del Sacro Cuore">>;



- visto il proprio decreto n. 5138 del 20 febbraio 2019, recante: «Modifiche al “Codice etico dell’Università Cattolica del Sacro Cuore”»;
- vista la relazione del Nucleo di Valutazione d’Ateneo del 17 aprile 2019 relativa alla “Verifica dei requisiti di idoneità per l’istituzione del XXXV ciclo dei Corsi di Dottorato”;
- vista la delibera adottata dal Senato accademico, nell’adunanza del 13 maggio 2019;
- vista la delibera adottata dal Comitato direttivo, nell’adunanza del 15 maggio 2019;
- valutata l’opportunità di avviare le procedure selettive sotto condizione dell’accreditamento e della verifica di mantenimento dei requisiti di accreditamento da parte di ANVUR,

### **DECRETA**

#### **Art. 1**

L’attivazione del corso di Dottorato in *Science* - XXXV ciclo, con sede amministrativa presso l’Università Cattolica del Sacro Cuore in accordo con la Katholieke Universiteit Leuven (Belgium), la Pontificia Universidad Católica de Chile Santiago (Chile) e l’University of Notre Dame du Lac - Notre Dame, Indiana (USA), secondo le disposizioni contenute nel documento allegato - in lingua inglese (*allegato 1*), quale parte integrante del presente decreto.

#### **Art. 2**

La nomina dei membri del collegio dei docenti del corso di Dottorato di cui all’art. 1, i cui nominativi sono riportati in *allegato 2*, quale parte integrante del presente decreto.

Milano, 20 maggio 2019

**IL RETTORE**  
**(Prof. Franco Anelli)**  
F.to: F. Anelli

**IL DIRETTORE AMMINISTRATIVO**  
**(Prof. Marco Elefanti)**  
F.to: M. Elefanti

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Per copia conforme all’originale.  
Milano, 28 maggio 2019

**IL FUNZIONARIO DELEGATO**  
**(Romolo De Angelis)**

Public Call for Admission to 5 positions in the International PhD in Science at Università Cattolica del Sacro Cuore - XXXV Cycle

**Art. 1**

**Opening**

This Call indicates the Coordinator, the partner universities, the duration of the course, the number of positions available and the number of scholarships granted by the partner Universities of the International PhD in Science.

International PhD in Science

Coordinator: Prof. Prashant V. KAMAT - University of Notre Dame du Lac, Indiana (United States of America).

Duration: 4 years.

Positions: 5.

Funded positions: 4.

Unfunded positions: 1.

Information: <https://dottorati.unicatt.it/science>

Details of the positions (see also <https://dottorati.unicatt.it/science>):

1 scholarship (joint research project between Università Cattolica del Sacro Cuore, University of Notre Dame du Lac) on “Supersonic cluster beam deposition of nanoalloys and bimetallic nanostructures for enhanced oxygen evolution reaction.”

Research topic: Hydrogen is considered the best alternative to fossil fuels, and hydrogen production with low or no greenhouse gas emissions can be obtained in photoelectrochemical water splitting. Here, hydrogen is produced from water using photoelectrochemical materials, which use light energy to directly dissociate water molecules into hydrogen and oxygen. The intrinsic slow kinetics of oxygen evolution reaction (OER) represents a major obstacle towards the development of efficient photoelectrochemical cells. Various combinations of metals, oxides and alloys have been investigated as catalysts to improve OER kinetics. In particular, bi-metallic or alloy electrodes are attracting a great interest as viable alternatives to the expensive Ru and Ir-based catalysts. We recently demonstrated that Au<sub>0.89</sub>Fe<sub>0.11</sub> nanoalloys exhibit strongly enhanced OER in comparison to the individual parent-metal nanoparticles, lowering the onset of OER and increasing up to 20 times the current density in alkaline solutions. Such a remarkable electrocatalytic activity is associated to nanoalloying, as demonstrated by comparative examples with physical mixtures of gold and iron nanoparticles. These results open attractive scenarios to the use of kinetically stable nanoalloys for catalysis and energy

conversion, in particular if one is able to synthesize nanoparticles with tuneable concentration of the composing materials. In this respect, the deposition of tailored nanoparticles directly on the electrodes can be obtained by supersonic cluster beam deposition (SCBD). This method has been shown to provide NP with controllable size, chemical composition and relative concentration of the constituents, both metals and oxides, for at least up to three elements. The deposition results in the formation of a porous granular film in which each nanoparticle keeps its original properties not protected by any organic or undesired capping agent. Aim of the project is to investigate the relationship between the granular film physical properties and the OER behaviour of nanostructured electrodes for different type of bimetallic systems, such as Ag/Fe, Au/Fe, and Ni/Fe-based compounds.

Other strategies for the synthesis of bimetallic systems will be explored in collaboration with prof. S. Neretina (Notre Dame University). In particular, the synthesis of nanoalloys and bimetallic nanostructures based on silver, gold and copper, may allow a unique exploitation of localized surface plasmon resonance to achieve a new generation of photo- and electrophotocatalysts, which can combine the excitation of hot-electrons and high selectivity to achieve unprecedented catalytic efficiency.

The optical properties of the nanostructures will be thoroughly investigated and insightful information about the mechanisms of energy transfer at the nanoscale will be obtained by in-situ surface-enhanced vibrational spectroscopy. In this context, new strategies based on Mie-type resonators and dielectric optical nanoantennas will be also utilized to enable real-time monitoring of the reactions under non-invasive conditions.

Università Cattolica del Sacro Cuore, tutor: Prof. Luca Gavioli;  
University of Notre Dame du Lac, tutor: Prof. Svetlana Neretina;  
Università degli Studi di Brescia, co-tutor: Prof. Ivano Alessandri.

Workplace: Università Cattolica del Sacro Cuore (Italy), Università degli Studi di Brescia, (Italy), University of Notre Dame du Lac, Indiana (United States of America).

Double degree opportunity with University of Notre Dame du Lac, Indiana (United States of America) on basis of the signed agreement.

#### Candidate Profile:

- Diploma: Master's degree or comparable qualification in Physics, Materials Science, Chemistry or adjacent fields. The title must be obtained before October 31<sup>st</sup>, 2018;
- A strong interest for multidisciplinary research is required;
- A solid background in physics, materials science or materials chemistry is required;
- Experience in optical microscopy and solution phase chemical synthesis will be considered as an advantage;
- Good knowledge of the English language, both spoken and written, is essential.
- Strong commitment, ability to work in a team, and eagerness for international mobility is desired.

1 scholarship (joint research project between Università Cattolica del Sacro Cuore, KU Leuven, Université de Lyon 1 (France), Università degli Studi di Brescia on “Phase-change materials-based nano-antennas and meta-surfaces ”.

Research topic: Recent advances of optoelectronic materials and devices expanded the frequency range of light sources and sensitivity of detectors enabling a variety of innovations that have helped to transform our lives and society. The quest to improve the device performances encouraged the miniaturization of traditional optical components. However, the hardcore underlying technology has not changed despite limitations in terms of integration and flexibility. On the material side, metals and, more recently, dielectric materials played the prominent role, despite the limited functionalities inherent to these materials. On the optical design side, most schemes rely on diffractive optical elements. In order to expand the field beyond current technology the project will explore the route of phase-change materials as potential candidates to augment devices functionalities. The strategy relies on synthesizing phase-change materials, for instance  $V_2O_3$  thin films, and exploring their structural and optical properties upon tunability of external parameters. Understanding of the underlying physics will then be exploited to investigate, first, single nano-resonators, and then expanding to metasurfaces – i.e. planar arrays of nanoscale (sub-wavelength) optical resonators. Different control protocols, based on the combination of electric fields, optical pulses and applied pressure, will be developed to engineer metamaterials whose properties can be switched on demand on ultrafast timescales. The project will involve both experimental and theoretical aspects spanning from ultrafast optics to structural characterization and Finite Element simulations.

Università Cattolica del Sacro Cuore, tutor: Prof. Claudio Giannetti;

Université de Lyon 1, co-tutor: Prof. Francesco Banfi;

Università degli Studi di Brescia, co-tutor: Prof. Costantino de Angelis

KU Leuven - tutor: Prof. Jean-Pierre Locquet;

Workplace: Università Cattolica del Sacro Cuore (Italy), Università degli Studi di Brescia (Italy), KU Leuven (Belgium) and Université del Lyon 1 (France).

Double degree opportunity with KU Leuven (Belgium) on basis of the signed agreement.

Candidate Profile:

- Master's degree or similar qualification in Physics, Materials Science, Engineering or adjacent fields. The title must be obtained before October 31<sup>st</sup>, 2019;
- A solid background in physics, optics or materials science is required;
- Experience in optics, FEM simulations or thin films/nanodevice characterization (electrical, structural) will be considered an advantage. Programming skills, for example in MATLAB and/or COMSOL, are also welcome;
- Good knowledge of the English language, both spoken and written, is essential;
- Strong commitment, ability to work in a team, and eagerness for international mobility is desired.

1 scholarship (joint research project between Università Cattolica del Sacro Cuore - MIUR PRIN 2017, prot. 2017RKWTMY 003, attosecond transient absorption and reflectivity for the study of exotic materials, aSTAR - and KU Leuven): “Investigation of few-atoms-thick films by time-resolved high resolution optical microscopy”.

Research topic: Thin films science and technology plays an important role in the high-tech industries. The demand for development of smaller and smaller devices requires advanced materials and new processing techniques. Thus, knowledge and determination of the nature, functions and new properties of thin films can be used for the development of new technologies for future applications.

The aim of this project is to use high resolution optical imaging techniques to provide a new probe to characterize and measure the physical and optical properties of few-atoms-thick films.

Recently, an optical microscope with imaging capabilities beyond the diffraction limit has been demonstrated. The microscope provides a sub-100-nm-resolution with visible light illumination using the light focusing properties of transparent microspheres. This microsphere assisted super-resolution optical imaging enhances the spatial resolution of traditional optical systems, allowing to image sub-wavelength structures.

The microscope will provide static white-light maps related to the thickness and uniformity of two-dimensional samples in the form of mono-elemental (Si, Sn) and dichalcogenides (Mo,W)Te thin films nanosheets. Since super-resolution exploits the evanescent waves present on the sample surface, a high sensitivity to thickness inhomogeneity is expected. The microscope will be merged with a time-resolved reflectivity/transmissivity apparatus, implemented through the ASynchronous Optical Sampling (ASOPS) technique. ASOPS allows high-speed pump-probe scanning over a nanosecond time window without a delay line. This set-up will generate transient reflectivity/transmissivity maps with 100 nm lateral resolution. The degree of adhesion of the thin films to the substrate, their thermomechanics and spatial uniformity will be investigated and characterized using principles from picosecond acoustics.

Novel dynamic Atomic Force Microscopy (AFM) techniques will complement the nanoscale investigation of the thin films.

Finally, it will be important to develop models for the data interpretation, also in view of the great deal of spectroscopic information that is potentially available in each pixel of an image. In this respect, automated analysis techniques will be considered.

Università Cattolica del Sacro Cuore; tutor: Prof. Gabriele Ferrini;  
KU Leuven; tutor: Dr. Eduard Fron;

Workplace: Università Cattolica del Sacro Cuore (Italy), KU Leuven (Belgium)

Double degree opportunity with KU Leuven (Belgium) on basis of the signed agreement.

Candidate Profile:

- Master's degree or similar qualification in Physics, Materials Science, Engineering or adjacent fields. The title must be obtained before October 31<sup>st</sup>, 2019;

- Candidates should have a solid background in optics. Previous experience in microscopy and/or ultrafast optics will be an asset;
- Good knowledge of the English language, both spoken and written, is essential;
- Strong commitment, ability to work in a team, and eagerness for international mobility is desired.

1 scholarship (joint research project between Università Cattolica del Sacro Cuore - MIUR PRIN 2017, prot. 2017NYPHN8 004, Metal Activated 2D cArbon-based platforMs, MADAM, codice CUP J56C19000330008 - and University of Notre Dame du Lac, Indiana, United States of America) “Advanced spectroscopies of 2D materials and hybrid interfaces for applications in the field of photocatalysis and photovoltaics”

Research topic: The project will tackle two novel aspects in the field of 2D materials and related applications. The first focuses on the capability to track the electronic properties of a set of 2D materials both pristine and functionalized when exposed to selected molecules or vapors that may introduce relevant changes of electronic structure, such as doping or band gap opening. The starting material to be considered is graphene, prepared with novel routes to achieve the desired level of doping or functionalization. Additional 2D materials will be selected along the project to match the specific properties required for applications. Infact all these materials will be used to prepare interfaces suitable for photocatalysis and photovoltaics applications. Consequently, the second novel aspect of the proposed work will be to conduct detailed spectroscopic studies of the interface electronic properties, aimed to gain a control (e.g. chemical gating) on the buried interface by gas absorption at the surface. Photophysics effects will then be explored by state-of-the-art spectroscopies, including time-resolved spectroscopies in the ultra-fast regime aimed to track charge transfer dynamics at the interfaces. The main goals of the project are:

- Accessing the change of the electronic properties of 2D materials and hybrid interfaces upon absorption of selected molecules;
- Tracking the dynamics of charge transfer processes induced by combined surface adsorption and photon irradiation, being these processes at the heart of future applications and device development;

Special note: The net scholarship amounts to roughly 1130 euro/month in Italy and 1695 euro/month while the student is in United States of America. and will also cover the annual PhD taxes.

Università Cattolica del Sacro Cuore, tutor: Prof. Luigi Sangaletti;

University of Notre Dame du Lac, tutor: Prof. Sylwia Ptasinska.

Workplace: Università Cattolica del Sacro Cuore (Italy), University of Notre Dame du Lac, Indiana (United States of America).

Double degree opportunity with University of Notre Dame du Lac, Indiana (United States of America) on basis of the signed agreement.

Candidate Profile:

- Diploma: Master's degree or comparable qualification in Physics, Materials Science, Chemistry or adjacent fields. The title must be obtained before October 31<sup>st</sup>, 2019;
- A strong interest for multidisciplinary research is required;
- A solid background in physics, materials science or materials chemistry is required;
- Experience in optical and electronic spectroscopies and surface science will be considered as an advantage;
- Good knowledge of the English language, both spoken and written, is essential;
- Strong commitment, ability to work in a team, and eagerness for international mobility is desired.

1 position without scholarship promoted by Università Cattolica del Sacro Cuore (joint research project between Università Cattolica del Sacro Cuore and University of Notre Dame du Lac, Indiana, United States of America): “Education, development, poverty: sustainable technology. A sustainable social impact of technology development”.

Research topic: The debate on technology development in the service of the common good is a subject of major concern, as it plays a key role for a sustainable development. Studies and research show how technology can represent a resource employed to face emerging social challenges. Several practical experiences show the need for technical profiles, which bring sciences and humanities together to develop a technology in the service of human dignity. The aim of this PhD research project is to outline transdisciplinary training guidelines for the construction of interfaculty academic paths, which combine the hard sciences with the humanities, to promote the development of value-generating technologies at the service of social innovation and the welfare system (health, social welfare, education, safety). The research will investigate the impact, in terms of return on social well-being as well as in terms of return on employment, of the introduction of "social technology expert" profiles in the organizational processes of non-profit and profit organizations involved in the social sphere, outlining which competences need to be developed within transdisciplinary training paths, also considering ethical and social implications of technology.

Università Cattolica del Sacro Cuore, tutor: Dr. Alessandra Vischi;

Università Cattolica del Sacro Cuore, co-tutor: Prof. Luca Gavioli;

University of Notre Dame du Lac, Indiana, United States of America, tutor: Prof. Jason Rohr.

Workplace: Università Cattolica del Sacro Cuore (Italy), University of Notre Dame du Lac, Indiana (United States of America).

Candidate Profile:

- Master's degree or comparable qualification in Education, Political, Linguistic and Philosophical Sciences;

- Degrees in Human development and environment, Environmental management and communications;
- A solid interdisciplinary background between humanities and hard sciences;
- Good knowledge of the English language, both spoken and written, is essential;
- Strong commitment, ability to work in a team, and eagerness for international mobility is desired;

## **Art. 2**

### **Assessment procedure**

The comparative evaluation of candidates applying to the International PhD in Science aims to discern the candidates aptitude for and interest in the scientific research proposed in the Research Program. The examination panel reserves the right to ask for a telephone or remote interview (such as Skype or similar).

## **Art. 3**

### **Admission requirements**

Application for participation in the competition, with no restrictions with respect to age and nationality, is open to candidates holding a Master's degree, or an Italian university degree obtained under the education system prior to Italian Ministerial Decree no. 509 of November 3<sup>rd</sup>, 1999 or a second-level university qualification obtained abroad and deemed eligible.

Application for participation is also open to candidates due to obtain one of the above-mentioned qualification by October 31<sup>st</sup>, 2019. In this case, examination candidates shall provide the Examination Panel with a self-declaration form attesting graduation or a qualification from a foreign university. Failure to do so will be cause for invalidation of the application.

Italian, EU and non-EU candidates that obtained, or will obtain, a qualification abroad, **by October 31<sup>st</sup>, 2019**, for the sole purpose of admission to the PhD Programme shall request recognition of its eligibility in the PhD Programme application form. To this end, the application shall be accompanied with appropriate documentation to enable the Examination Panel to rule on the request for eligibility.

## **Art. 4**

### **Application form**

Candidates who intend to participate in the competition must submit an application to the Rector of Università Cattolica del Sacro Cuore by **Friday September 27<sup>th</sup>, 2019**.

The application form is available at <http://dottorati.unicatt.it/concorsi-milano> **until 2 p.m. (local time) on the expiration date of the present public announcement.**

In the application form, to be filled in online only, available in English and just online, candidates shall declare under their responsibility:

- one of the 4 research topics established by Università Cattolica del Sacro Cuore;
- personal information: surname, first name, fiscal code (for Italian nationals only), date and place of birth, citizenship, residence and domicile elected for the purposes of the

- competition;
- for graduate students: qualification, date it was obtained and name of the conferring university;
- foreign languages known besides English.

Candidates must complete their application with the following documents – upload format .pdf or .jpg:

- a detailed *curriculum vitae et studiorum* written in English;
- self-certified Master's degree document with final mark and exams transcript, or certification of qualification obtained abroad with final mark and exams transcript translated in English. A self-certified translation will be accepted for the purpose of selection;
- certification of any other qualifications, such as postgraduate and advanced specialisation degrees, obtained in Italy and/or abroad; a copy of any other qualification considered useful for the purposes of the comparative evaluation. The documentation as to be translated in English. A self-certified translation will be accepted for the purpose of selection;
- a list of the publications deemed useful for the purposes of the comparative evaluation, and a list thereof on unstamped paper;
- two references letters written in English. The letters shall be sent to the same email address indicated above [phd.science@unicatt.it](mailto:phd.science@unicatt.it) within the date of expiration of the present public announcement;
- for non-native speakers of English, a certificate attesting adequate proficiency in English, such as:
  - FCE;
  - CAE;
  - CPE;
  - BEC
  - *British Chamber of Commerce*;
  - *Trinity College*;
  - TOEFL;
  - IELTS;
  - or certificate of the kind deemed useful to prove proficiency in English;
- an identification document, duly signed;
- fiscal code (for Italian nationals only);
- card-size photograph;
- students with a degree obtained or to be obtained in NON-EU countries shall provide a translation, authentication and a certificate of equivalence of qualification of their foreign degree certificates, issued by the Italian Consulate/Embassy representative offices in the countries where they have obtained/will obtain the degree. EU students must provide a Diploma Supplement from the University where they completed their studies as an alternative to the certificate of equivalence of qualification.

The application will be considered complete and valid only upon payment of the selection fee of € 100,00 (not refundable) to be paid by credit card (VISA or MASTERCARD).

The University reserves the right to adopt measures for the exclusion of candidates who do not have the prerequisites required or did not comply with the indications of the public announcement, also after the competition-related examinations have taken place.

Candidates with disabilities, in order to attend the selection examination, must specify in their application the aid required in relation to their disability, in accordance with Italian Law no. 104 of February 5<sup>th</sup>, 1992.

#### **Art. 5**

##### **Application at the Partner Universities**

Regarding scholarships at the Partner Universities, as mentioned in the Art.1, the recruitment rules for candidates applying for the International Ph.D. in Science will be provided by each institution according to its own procedures.

#### **Art. 6**

##### **Examination Panel**

The Examination Panel of the comparative evaluation for admission to the PhD Programme in Science is appointed by Rector's Decree for the competition-related examinations.

The Examination Panels will consist of three academics/researchers pertaining respectively to the PhD Research Programme Topic in Differential geometry and applications to modern physics or Topic in Cooperative Effects in quantum systems.

The composition of the Panels will be published, after the expiration date of the present public announcement, at <http://dottorati.unicatt.it/concorsi-milano>

In a preliminary meeting or preliminary meeting the Examination Panels shall define the criteria for the comparative evaluation necessary for a single merit-based ranking to be drawn up. These criteria will be published, as by law enacted, at <http://dottorati.unicatt.it/concorsi-milano>

#### **Art. 7**

##### **Admission to PhD Programmes**

Candidates are admitted to the International PhD in Science according to the ranking, until the established number of positions have been filled.

The results of the competition in the form of a single merit-based ranking will be published at <http://dottorati.unicatt.it/concorsi-milano>

#### **Art. 8**

##### **Enrolment**

Candidates admitted to the PhD must enrol via the Doctoral Studies Office at Università Cattolica del Sacro Cuore - Largo Gemelli 1, 20123 Milan, by sending the following documentation by email:

- the PhD Programme application form (once uploaded this will produce a confirmation email

sent to the candidate);

- Personal and Tax data Form.

The documents must be sent within 7 (seven) days of receipt the confirmation e-mail of enrolment at Università Cattolica del Sacro Cuore.

## **Art. 9**

### **Aid and studentships**

Tuition fees for the International PhD in Science at Università Cattolica del Sacro Cuore are set annually by the Board of Directors.

PhD students are required to pay tuition fees annually amounting to € 1,516.00, to be paid in three instalments: the first (of € 516.00) upon enrolment, the second (of € 500.00) by February 28th, and the third (of € 500.00) on June 30th each year.

A scholarship on the PhD programme is compatible with other income (also earned on a regular basis) in the calendar year of the scholarship, provided that such income does not exceed the scholarship itself. Should these income limits be surpassed, the scholarship shall be revoked for the year in question. Students with scholarships shall annually declare the income and notify of any excess of the prescribed limits.

The scholarships are renewed annually, provided that the PhD students have completed the programme of activities set for the previous year.

The amount of the scholarship, paid in monthly instalments, is € 15.343,28 per year, before social security charges. The scholarship is subject to the payment of social security contributions (INPS separate management) pursuant to Art. 2, Paragraph 26, of Italian Law 335 dated of August 8th, 1995, and subsequent amendments. The scholarship is exempt from local income tax and personal income tax (IRPEF).

The studentship amount shall be increased by max. 50 percent, for a period not over 18 months, if the PhD student is authorised by the Teaching Panel to conduct research abroad.

Starting from the second year, to each PhD student, with or without a studentship, is granted an annual sum covering research activities in Italy and abroad amounting to 10 percent of the annual gross amount of the scholarship, equal to € 1.534,33.

## **Art. 10**

### **Public employee**

Current legislation on leave of absence or special leave applies to public employees admitted to International PhD in Science.

## **Art. 11**

### **Incompatibility**

Attendance of the PhD Programme is not compatible with enrolment in other study programmes, postgraduate schools (except for medical specialisation schools), and other PhD Programmes (except in the case of joint dissertation supervision agreements).

## **Art. 12**

### **Obligations of PhD students**

PhD students are required to take part regularly in the activities set out in their curricula, and

to commit to the regulatory norms of their University of enrolment.

**Art. 13**

**Conferment of PhD degree**

The procedure of PhD degree conferment is governed by the regulatory norms of the University of enrolment.

**Art. 14**

**Public disclosure**

This public announcement is published on the *Euraxess* European website, on the MIUR website and at: <http://dottorati.unicatt.it/concorsi-milano>

**Art. 15**

**Final provisions**

For any matter not explicitly contemplated in this public announcement, the provisions indicated in the Regulatory Norms of the University of PhD students' enrolment shall apply.

Head of the procedure of the present selection is Dr Roberto BRAMBILLA, Director of Postgraduate Education and Research Partnership, Via Carducci 28/30, Milan, Italy.

Nomina dei membri del collegio dei docenti del corso di Dottorato internazionale in *Science*, con sede amministrativa presso l'Università Cattolica del Sacro Cuore in accordo con la Katholieke Universiteit Leuven (Belgium), la Pontificia Universidad Católica de Chile Santiago (Chile) e l'University of Notre Dame du Lac - Notre Dame, Indiana (USA), – ciclo XXXV

Collegio dei docenti:

- Prof. Prashant V. KAMAT - University of Notre Dame du Lac, Indiana – Coordinatore;
- Prof. Fausto BORGONOVÌ, Università Cattolica del Sacro Cuore;
- Prof. Luca GAVIOLI, Università Cattolica del Sacro Cuore;
- Prof. Marco SQUASSINA, Università Cattolica del Sacro Cuore;
- Dott. Claudio GIANNETTI, Università Cattolica del Sacro Cuore;
- Prof. Mauro SPERA, Università Cattolica del Sacro Cuore;
- Dott. Riccardo MARZUOLI, Università Cattolica del Sacro Cuore;
- Prof. Francesco BANFI, Università di Lione (FRANCIA);
- Prof. Alejandro CABRERA, Pontificia Università del Cile (CILE);
- Prof.ssa Patricia CLARCK, University of Notre Dame du Lac, Indiana; (STATI UNITI D'AMERICA);
- Prof. Steven DE FEYTER, Università Cattolica di Lovanio (BELGIO);
- Prof. Giuseppe DE NITTIS, Pontificia Università del Cile (CILE);
- Prof. Jan ELSÉN, Università Cattolica di Lovanio (BELGIO);
- Prof. Mario FAVRE, Pontificia Università del Cile (CILE);
- Prof. Greg HARTLAND, University of Notre Dame du Lac, Indiana;
- Prof. Boldizsar JANKO, University of Notre Dame du Lac, Indiana;
- Prof. Masaru KUNO, University of Notre Dame du Lac, Indiana;
- Prof. Walter LUYTEN, Università Cattolica di Lovanio (BELGIO);
- Prof. Jeronimo MAZE, Pontificia Università del Cile (CILE);
- Prof. Enrique MUNOZ, Pontificia Università del Cile (CILE);
- Prof. Lino PEREIRA, Università Cattolica di Lovanio (BELGIO);
- Prof.ssa Sylwia PTASINSKA, University of Notre Dame du Lac, Indiana;
- Prof. Riccardo RAABE, Università Cattolica di Lovanio (BELGIO);
- Prof. Javier RECIO, Pontificia Università del Cile (CILE);
- Prof. Marco ZAMBON, Università Cattolica di Lovanio (BELGIO);
- Dott.ssa Despina FRAGOULI, Istituto Italiano di Tecnologia (IIT).