Agreement
between

Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V.
Hofgartenstraße 8, 80539 München, Germany

represented by its President Prof. Dr. Peter Gruss and
its Secretary General Dr. Ludwig Kronthaler

(hereinafter referred to as MPG)

and

École Polytechnique Fédérale de Lausanne
[1015 Lausanne, Switzerland]

represented by its President Prof. Dr. Patrick Aebischer and
its Dean of Research Prof. Dr. Benoit Deveaud-Plédran

(hereinafter referred to as EPFL)

(together hereinafter referred to as "Parties")

Preamble

Whereas MPG and EPFL share a common interest in the research field of Nanoscale Science and Technology; and

Whereas both Parties have since then been involved in various forms of research cooperations in diverse fields; and

Whereas these Center activities present a concept for a multi-disciplinary approach that will explore novel scientific aspects of (bio)molecular nanostructures at the interface between physics, chemistry, engineering and life sciences; and

Whereas both Parties wish to further strengthen their cooperation by introducing collaborative activities at the MPI for Solid State Research (MPI-FKF), Stuttgart, in Germany and the Institute of Chemical Sciences and Engineering@EPFL, Lausanne in Switzerland;

Whereas MPG and EPFL share the understanding that MPG wishes to introduce the Fritz-Haber Institut of MPG, Berlin, the MPI for Biophysical Chemistry and the MPI for Intelligent Systems as further scientific collaborators and that EPFL wishes to introduce the Institute of Condensed Matter Physics@EPFL, the Institute of Materials@EPFL and the the Interfaculty Institute of Bioengineering of EPFL as further scientific collaborator;

the Parties hereby agree to the following:

§ 1 Objective of the Agreement

1. The objective of this Agreement is to promote and further the cooperation between researchers and research groups of both Parties by collaboration in a Max Planck EPFL Center in the field of Molecular Nanoscience and Technology. This Agreement is intended to reflect the Parties´ understanding of scientific co-operation. The Parties agree to promote the scientific exchange of information and scientific data as well as the distribution of results, methods, and techniques of their joint work in their respective countries.
2. Nothing in this non-exclusive Agreement shall be regarded as creating a joint venture, partnership, agency, employment relationship, franchise relationship or taxable entity between the Parties, nor shall either Party have the right, power or authority to create any obligations or duty, express or implied, on behalf of the other Party hereto, it being understood that the Parties are independent vis-à-vis one another.

§ 2 Organization

1. The activities under this collaboration shall be guided by one scientist by each Party (hereinafter referred to as the "Center Heads". The scientists to be named by each Party are listed in Appendix C. They shall be co-directing the Center activities and shall coordinate the scientific activities by:
    a. determining the scientific direction of the Center activities
    b. determining what research projects the Center will undertake (as described in Appendix F)
    c. naming a scientist or scientists of his group to be Principal Investigator(s) of the Parties´ research projects
2. Each member of the Leading Team shall have a deputy listed in Appendix C as well.
3. The members of the Leading Team shall name one Coordinator or Secretary each who shall assist them in administrative matters, such as being the contact person for participants in Center activities or the organization of workshops.
4. The Center Heads shall chair the Scientific Board (the "Scientific Board" or "SB"), that shall be comprised of two additional Max-Planck directors and two EPFL professors. The composition of the SB will be determined by the Center Heads. SB members are chosen to ensure adequate expertise in the research areas covered by the Center activities. The Center Heads will report to the Vice Presidents of EPFL and MPG.
5. The initiative for and the planning of these activities will be undertaken by scientists of both Parties and will be reviewed by, approved and coordinated by the Leading Team.

§ 3 Collaborative Activities

1. Collaborative activities shall emphasize research in the field of Molecular Nanoscience and Technology, the major focus will be on (bio)molecular interfaces and nanostructures. The activities shall be referred to by mentioning the collaboration of the Parties as "Max Planck EPFL Center on Molecular Nanoscience and Technology".
2. The scope of activities of the Parties´ collaboration shall serve as a forum for cooperative research and will include:
    a. Joint research projects conducted by scientists of both parties further to be described (see Appendix F)

b. Joint seminars, symposia and other scientific meetings
c. Visiting opportunities for scientists and PhD students between the Parties
d. Joint graduate research training opportunities for PhD students (MPG/EPFL School)
e. Joint Max Planck EPFL Center on Molecular Nanoscience and Technology laboratory on EPFL Campus
f. Appointment of EPFL researchers as Max-Planck Fellows,
g. Appointment of Max-Planck researchers as Visiting Scientists or Distinguished Visiting Professors at EPFL; and
h. Other cooperative activities needed for implementing the joint research.

3. The relevant scope of activities including the duration of visits shall always be performed in the spirit of equivalence and reciprocity. Details are included in Appendix G.

4. Workshops and summer schools initiated as an activity under this Agreement shall be administrated by the Party organising the activity and closely followed by the Coordinators.

5. In case one Party would like to invite third Parties to their cooperative activities or extend those activities to third Parties, this Party shall consult with the other Party and they shall decide on this request in an amicable way. There shall be a cooperation agreement with the third party regarding the concrete cooperation.

§ 4 EDOC-MNST

1. Legal responsibility for EDOC-MNST rests with EPFL.
2. The Max-Planck-EPFL Graduate School on Molecular Nanoscience and Technology (EDOC-MNST) shall attract prospective graduate students. The Research School and the benefits of its educational program will be extensively advertised. The joint doctoral program will be announced in parallel on the EPFL web page as MPG-EPFL Initiative on the Doctoral School EDOC platform. EDOC-MNST PhD students will be admitted to one of the participating doctoral programs at EPFL. Participating Doctoral Programs are EDPY-Physics, EDCH-Chemistry, EDMX-Materials Science and EDBB-Biotechnology and Bioengineering.
3. Doctoral students will be selected according to the selection procedures of the participating doctoral programs. Enrolment in the EDOC-MNST program requires funding through one of the Joint Research Projects or through other projects funded jointly or individually by the Parties. The SB takes the final decision of acceptance of students in the EDOC-MNST program.
4. The enrolled students must comply with the « Ordonance et Directives sur la formation doctorale à l'Ecole Polytechnique Fédérale de Lausanne ». Students who are already registered in one of the above EDOC programs can additionally be enrolled in EDOC-MNST upon approval by SB. The thesis research projects will be arranged in a way that the students working at MPIs should spend some time at EPFL partner labs and vice versa. Employment conditions of the PhD students are determined by the applicable laws and regulations of the hosting Party.
5. EPFL will grant researchers of Max-Planck participating in the Center activities, who hold a position comparable to EPFL faculty (director – full professor, research group leader – associate professor and junior research group leader – assistant professor) the right to act as thesis director. Selected members from MPG can be nominated

as "Professeur Titulaire" by the EPFL president. Applicable EPFL laws and regulations apply.

§ 5 Max Planck Fellows:

The Parties would like to include Max Planck Fellowships (Max Planck Fellows) into their cooperative activities. Any of those Fellowships will be handled according to the Max Planck rules and regulations.

§ 6 Evaluation

1. The Center activities are, during the term of this agreement, evaluated by an Evaluation Committee, which will begin its work about four (4) years after the commencement of activities. The Evaluation Committee shall consist of internationally renowned scientists who are not members of the Parties.
2. The Evaluation Committee shall consist of six individuals, whereby the Vice President Chemistry, Physics and Technology of MPG will have the right to nominate three individuals and the Vice President for Academic affairs of EPFL will have the right to nominate three individuals.
3. The Parties share the understanding that apart from the work of the Evaluation Committee the Center activities may be subject to their internal evaluation process as well.

§ 7 Funding

1. Funding will be provided by the Parties for research activities of a duration of five (5) years up to the budget detailed in Appendix B. The operation of Center activities is subject to the budgetary appropriations available to each Party and the laws and regulations applicable to both Parties.
2. In case one of the Parties is not able to provide the budget in one year or for the remaining duration of the agreement as committed to in Appendix B this Party will inform the other Party on necessary modifications and both Parties will jointly discuss further appropriate steps for their cooperation.
3. In the exchange of scientists between the two Parties, travel expenses shall normally be borne by the sending institution, and accommodation expenses shall normally be borne by the hosting institution, unless otherwise agreed upon in a specified case. No per diem rate will be paid by the hosting institution.
4. All equipment purchased for the collaborative research performed under this Agreement shall remain the property of the respective Party and shall remain in the premises of the respective Party. Exchange of equipment, if any, requires a written agreement between the Parties that includes regulations on return and liability issues as well as any financial settlement in case of property transfer.

§ 8 Personnel

1. Each member of the Leading Team will choose scientists of the relevant Party to take part in the Center activities. The names of the participating scientists shall be listed in Appendix C and their participation shall be arranged by consultation with the Center Heads. Any changes must be promptly communicated and shall result in an update of Appendix C by the SB.

2. Individual employment decisions will be left to each Party. The employees of each Party shall retain their affiliation to the relevant employer and their original employment status in the country of origin. Thereby, the Parties shall fully retain their duties as employer, and pay and manage personnel affairs pursuant to the applicable legislation and internal policies.
3. Any possibility for personnel of MPG to hold teaching hours at EPFL needs to follow the rules and regulations of MPG.
4. The Parties will apply the relevant provisions and national regulations in force regarding insurance, accidents and medical expenses of the participating researchers. The Parties undertake to ensure that any necessary applications (e.g. working permits, correct visa application) pertaining to the residency of researchers belonging to their institution are applied for and permitted under their national regulations in advance and undertake to support the other Party on relevant matters, e.g. by inviting researchers to their institution to support the visa application process.
5. As a matter of internal regulations MPG is also allowed to send grant holder to EPFL. They will stay affiliated to MPG and will not be subject to directives of EPFL.

§ 9 Facilities

1. Center participants shall have reasonable access to the relevant facilities and/or equipment of the laboratories taking part in Center activities for the purposes of carrying out their research under this agreement.
2. Security regulations at the relevant institutions have to be followed by all personnel at all times.

§ 10 Work Results

1. "Work Results" within the meaning of this Agreement shall mean any results whether fit for protective rights or not, generated under a Research Project approved as per Appendix G.

2. Any Work Results generated by staff members of MPG shall belong to MPG. Any Work Results generated by staff members of EPFL shall belong to EPFL. If several inventors or authors from both Parties are the creators or authors of specific intellectual property rights (IPR), such IPR shall belong to both Parties (joint IPR). In order to allow efficient exploitation and transfer of innovative joint IPR, the parties, through their technology transfer offices, shall decide on a case-by-case basis which Party will take the leadership and risks for the evaluation of the concerned IPR, their possible protection and the marketing, licensing and transfer activities for their exploitation. As a general principle, the leadership shall be attributed either to the Party having contributed most to the joint IPR or to the Party having the best potential to find appropriate industrial partners to further develop and exploit the joint IPR or to the Party which is the employer of inventor(s) or author(s) willing to develop a start-up / spin-out company based on such joint IPR. The choice of leadership shall be accepted by both parties. The leading Party shall be the formal owner of the concerned joint IPR and shall therefore be authorized to sign any agreement (including without limitation license agreements) regarding said joint IPR. The Parties, through their respective technology transfer offices, will establish on a case by case basis, an agreement regarding each such joint IPR. In the case the leading Party intends to abandon a specific case of joint IPR, the other Party shall have the right, but not the obligation, to take over the leadership and this clause shall continue to apply mutatis mutandis.

3. For duration of the Agreement the Parties shall grant each other a no-charge, non-transferable and non-exclusive right of use in the Work Results if and to the extent that this is necessary for the successful performance of the Research Project.

4. The Parties shall enter into a separate Agreement in respect of any desired commercial utilization of the Work Results of the other Party.

5. Both Parties shall be entitled to use the Work Results developed under this Agreement at no charge and in an unrestricted manner for non-commercial scientific purposes (research and teaching).

6. In the event that one of the Parties wishes to collaborate with an industrial partner on certain topics covered by the "Max Planck EPFL Center on Molecular Nanoscience and Technology", the Parties may do so separately. The relevant Party will ensure that any agreement with an industrial partner will include

    a. the possibility to publish results
    b. the principle that "ownership follows inventorship"
    c. the principle that no intellectual property will be exploited by the commercial partner free of charge.

7. In the case an employee (scientist, PhD student, professor, MER, etc.) of one Party is working at the premises of the other Party, such person shall fully comply with all confidentiality obligations of the hosting Party. In particular, such visiting person shall not use, copy, transfer or disclose any non published information, which are accessible at the hosting Party, without the prior written approval of the responsible professor or head of laboratory of the hosting Party. In the case such visiting person contributes incidentally to the creation of any IPR outside of his/her project during his/her stay at the hosting Party, such IPR shall be fully owned by the hosting Party without any restriction. The concerned visiting person shall be authorized by his/her employer to sign all documents necessary to assign such ownership to the hosting Party or to any third party designated by the hosting Party. In the case such IPR generate net income, for the distribution of such income, the visiting person will be considered as an inventor or author of the hosting Party. In the event the terms and conditions of being considered an inventor or author of the hosting Party are less favourable than being an inventor of the sending Party, the Parties shall negotiate in good faith to solve this discrepancy.

8. For the avoidance of doubt, IPR which is generated by such visiting person within his/her project shall be treated according to clause 9.2 above.

9. In the case of works of students who are not employees of either Party, each concerned laboratory is responsible to agree with such students, in writing if necessary, on confidentiality and IPR issues prior to the beginning of such works (semester, master projects, etc.). Such an agreement is mandatory in the case a student is involved or participates in a project with contractual commitments of the concerned institution towards third parties, such as industry sponsored research projects. The technology transfer office of the concerned Party shall provide the necessary support to the laboratories for such cases.

§ 11 Confidentiality

Both Parties undertake to hold in confidence any and all documents marked as secret and any other secret information which the Parties have made available to one another in a manner that clearly indicates their confidential nature, and not to disclose such information to any third party. Such obligation of confidentiality shall survive termination of this Agreement, but apply no longer than three (3) years following completion of the research projects, and shall not extend to information that has become part of the public domain as a result of third-Party publications or in any other manner, or the disclosure of which has been explicitly approved by the Party to whom it relates.

The Parties agree to sign a Non Disclosure Agreement as attached in Appendix E in preparation of the actual start of their cooperative activities.

§ 12 Publications

In principle, both Parties shall jointly publish the results of their joint activities. In the event of sole publication by either Party, the written consent of the other Party shall be obtained prior to publication; such consent shall not unreasonably be withheld. In such a case, the contribution of the other Party shall be acknowledged in accordance with internationally accepted practice. Failure to respond within thirty (30) days after the submission of the draft of publication is considered as approval of the publication.

§ 13 Material Transfer Issues

Any Material Transfer issues arising in the performance of and under this Agreement will be handled by using the template attached to this Agreement in Appendix D.

§ 14 Liability

1. Nothing in this Agreement shall constitute any representation, warranty or guarantee by one Party to the other as to the accuracy, merchantability, fitness for a particular purpose, non-infringement of patents or other rights of third parties regarding any information or Work Results provided under this Agreement. A Party shall not, to the extent that it disclosed any information or Work Results, be held liable for any errors or omissions in and for the use (and the results of the use) of the information and Work Results.

2. Each Party shall be solely liable for any loss, damage or injury to third parties resulting solely from the performance of its own work.

3. A Party shall not be liable for any loss or damage to the other Party, except in case of willful misconduct or gross negligence of the first Party or its personnel. For the avoidance of doubt and to the extent permitted by law, neither Party shall be liable for any indirect, incidental or consequential loss or damages towards the other Party, including but not limited to loss of profit, loss of revenue or other economic loss.
4. With respect to materials supplied by one Party to another hereunder, the supplying Party shall be under no obligation, or liability or no warranty condition or

representation as to the sufficiency, accuracy or fitness for purpose of such materials.

5. The Parties shall have the applicable insurance policies covering their own employees or other persons working under their responsibility for personal injury or death that may result from the performance of this Agreement. None of the Parties shall be liable for expenditures of activities which are outside of the scope of this agreement.

§ 15 Duration of the Agreement and termination

1. The Agreement shall be effective as of 1 January, 2013 and shall remain in force for a period of five (5) years.
2. The Parties to the Agreement may terminate the Agreement for an important reason upon thirty (30) days prior written notice.
3. The Parties to the Agreement may terminate the Agreement for any reason upon six (6) months prior written notice.
4. The Agreement may be amended once following successful evaluation, by written approval of both Parties.

§ 16 Disputes

1. Any disagreement or dispute that may arise in the execution, interpretation or application of this Agreement shall be resolved by trustful negotiation between the Parties, preferably in the first stage by the coordinators and then through the Leading Team.

2. If no settlement is possible, each member of the Leading Team may call on the Vice President of MPG and the Vice President of Academic affairs of EPFL to settle the dispute in a trustful and amicable way. Their decision can only be reached unanimously and will be accepted by both Parties as the binding and final decision.

§ 17 Compliance with Laws and Regulations

All research activities conducted in connection with the Center Activities shall be done in compliance with all applicable laws, regulations and guidelines of the country and institution in which the research is conducted. The Parties agree that they must provide any necessary materials to the participants of the other Party for them to be able to comply with this regulation.

§ 18 Final Provisions

1. This Agreement together with its Appendices constitutes the entire Agreement between the Parties with regard to its subject matter and shall not be changed, modified or terminated except by a written instrument subscribed by both Parties.

2. If any part of this Agreement shall be deemed invalid or unenforceable for any reason, the remainder of this Agreement shall be valid and enforceable as if such

provision had not been included therein. A provision, which is legally acceptable and comes closest to the unenforceable provision, shall substitute such provision.

[Signatures appear on the following page]

Max–Planck-Gesellschaft zur Förderung der Wissenschaften
Munich, 16 July 2012

Prof. Dr. Peter Gruss
President

Dr. Ludwig Kronthaler
General Secretary

École Polytechnique Fédérale de Lausanne
Lausanne, 16 July 2012

Prof. Dr. Patrick Aebischer
President

Prof. Dr. Benoit Deveaud-Plédran
Dean of Research

APPENDIX A
Scientific outline of the Max Planck EPFL Center on Molecular Nanoscience and Technology

Nanoscale Science & Technology (NST) is a vital research discipline wherein novel techniques to probe and manipulate matter on the single atom and molecule scale are developed. On the fundamental side, these tools have enabled numerous new discoveries of how the properties of matter are governed by the atomic and molecular arrangements at nanoscale dimensions. On the application side, these discoveries have stimulated substantial improvements of current technologies, as well as pioneering technological innovations in a range of different fields from computing to life sciences.

The key aspect of molecular nanoscience is the design and assembly of well-defined molecular architectures, which opens extraordinary possibilities for fundamental research and applications. Essential for the organization of molecules is the interplay between intermolecular and interfacial interactions. The incorporation of functional units into the molecular modules enables to provide a pre-programmed function to the overall architecture, thus paving the way for a wide range of applications in different fields. Two-dimensional (2D) interfaces provide a particularly suitable platform for supramolecular engineering, as has been documented by the successful realization of novel 2D nanoscale functional materials or devices with custom-made properties such as charge injection, transport, or storage. This has led to the improvement of organic electronic devices, most notably field-effect transistors, light-emitting devices, photovoltaic cells, and chemical sensors. Molecular nanoscience has been strongly inspired by biological systems in nature, and there are many ongoing efforts to transfer their operation principles to their synthetic counterparts.

The exciting possibilities and benefits that can be reaped by bringing NST and life sciences under one umbrella are bilateral: NST provides the tools and technology platforms for the investigation and engineering of biological systems and life sciences offer inspiration models and bio-assembled components to nanotechnology. Correspondingly, nanobiotechnology applies nanoscale phenomena and techniques to evaluate and transform biosystems, while it uses biological principles and materials to create new devices and systems integrated from the nanoscale. The scientific challenges in such a venture are manifold. For example, with significant progress in understanding the genetic basis and biochemical pathways that are involved in disease, there is an urgent need for ultra-sensitive, highly specific detection technologies with the capability for real-time monitoring. Moreover, multi-functional analytical systems are required that not only diagnose early stages or progression of a diseased state, but also allow the identification of ultralow amounts of unique biological molecules not addressable by current assays. NST has the capacity to address such a challenge through the simultaneous engineering of nanoscale structures, processes and systems in tandem with the advancement of the understanding of biology at the nanoscale.

Establishing NST-based methodologies in life science-related fields thus holds great promise to revolutionize research in supramolecular chemistry, biology, biotechnology, and medicine. This is expected to result in a new era in healthcare, with novel strategies for the treatment and management of a range of diseases. Likewise, bringing nanoanalytical approaches together with molecular nanostructures and biomolecular interfaces is expected to deliver new strategies for next-generation diagnostic tools. Furthermore, the development of tailored catalytic surfaces and nanostructures carries immense potential to meet the urgent demands on green chemistry. These prospects from both the fundamental and application perspectives strongly motivate the need for the creation of the Center on Molecular Nanoscience and Technology.

Molecular nanoscience takes a unique position at the crossroad of chemistry, physics, life sciences and engineering. The fusion of these fields into a highly interdisciplinary research currently receives very strong attention by government-aided initiatives. However, there is no clearly defined central body or a single institute focused on this convergence. Similarly, progress in nanobiotechnology depends on a multidisciplinary approach and the bundling of a critical mass of research efforts over a sufficient period to achieve useful results. In fact, a systematic and dedicated hub that exists for a period of at least 10 years is indispensable to successfully tackle the challenges and attain the envisioned breakthroughs. The interdisciplinary Max-Planck-EPFL Center for Molecular Nanoscience and Technology is conceived precisely to fulfill this demand.

APPENDIX B
Budget and Contributions of the Parties

Budget and contributions (in k€)

	2013	2014	2015	2016	2017
MPG	480	580	700	700	700
EPFL	480	580	700	700	700
total	960	1160	1400	1400	1400

As some of the individual programs and projects of the Center will not be fully operational from the beginning of the cooperation, a two-year induction period to reach the final operational budget is accounted.

Annual Budget 2013

	Total (k€)	MPG (k€)	EPFL (k€)
PhD students	140	100	40
Coordinator	60	60	-
WinterSchool	-	-	-
PostDoc Projects	370	210	160
Master Students	20	20	-
Travel	60	30	30
Workshop	40	20	20
Visiting Profs	20	-	20
Joint Lab	180	-	180
Fellows	40	40	-
General Admin	30	-	30

Annual Budget 2014

	Total (k€)	MPG (k€)	EPFL (k€)
PhD students	180	100	80
Coordinator	70	70	-
WinterSchool	40	20	20
PostDoc Projects	420	250	160
Master Students	40	40	-
Travel	70	40	30
Workshop	40	20	20
Visiting Profs	40	-	40
Joint Lab	200	-	200
Fellows	40	40	-
General Admin	30	-	30

Annual Budget 2015-2017

	Total (k€)	MPG (k€)	EPFL (k€)
PhD students	240	150	90
Coordinator	70	70	-
WinterSchool	40	20	20
PostDoc Projects	480	260	220
Master Students	60	60	-
Travel	80	40	40
Workshop	40	20	20
Visiting Profs	60	-	60
Joint Lab	220	-	220
Fellows	80	80	-
General Admin	30	-	30

APPENDIX C
List of Participants

1. From Max Planck Society

Name	Institution	Function
Prof. K. Kern	MPI-FKF	Center Head
Prof. J. Maier	MPI-FKF	
Prof. B Lotsch	MPI-FKF	
Dr. K. Balasubramanian	MPI-FKF	
Dr. U. Schlickum	MPI-FKF	
Prof. M. Scheffler	FHI	Scientific Board
Dr. V. Blum	FHI	
Dr. Gert von Helden	FHI	
Prof. H. Grubmüller	MPI-BPC	
Prof. A. Wodtke	MPI-BPC	Scientific Board
Dr. D. Schwarzer	MPI-BPC	
Prof. J. Spatz	MPI-IS	
Dr. P. Fischer	MPI-IS	
Dr. C. Pacholski	MPI-IS	
Dr. H. Böhm	MPI-IS	

2. From EPFL

Name	Institution	Function
Prof. J. Hubbell	Bioengineering	Scientific Board
Prof. S. Maerkl	Bioengineering	
Prof. A. Radenovic	Bioengineering	
Prof. M. Swartz	Bioengineering	
Prof. H. Brune	Physics	
Prof. L. Forro	Physics	
Prof. C. Hébert	Physics	
Prof. T. Kippenberg	Physics	
Prof. M. Grätzel	Chemistry	
Prof. A. Osterwalder	Chemistry	
Prof. T. Rizzo	Chemistry	Center Head
Prof. R. Beck	Chemistry	
Prof. A. Fontcuberta	Material Science	
Prof. N. Marzari	Material Science	
Prof. F. Stellacci	Material Science	
B. Deveaud-Pledran		Scientific Board

MATERIAL TRANSFER AGREEMENT

FOR THE DISTRIBUTION OF BIOLOGICAL MATERIAL

to non-profit recipients

This Agreement is concluded between

RECIPIENT

Organisation _____

Street _____

Post-Code, City _____

Country _____

for

RECIPIENT SCIENTIST

Name and Title _____

and

PROVIDER

Organisation _____

Street _____

Post -Code, City _____

Country _____

PROVIDER SCIENTIST

for

Name and Title _____

I. Definitions:

1. PROVIDER:
   Organisation providing the ORIGINAL MATERIAL. The name and address of this party is specified on the first page of the MTA.
2. RECIPIENT:
   Organisation receiving the ORIGINAL MATERIAL. The name and address of this party is specified on the first page of the MTA.
3. RECIPIENT SCIENTIST:
   The name is specified on the first page of the MTA.
4. ORIGINAL MATERIAL:
   The description of the material being transferred will be specified at the end of the MTA.
5. MATERIAL:
   ORIGINAL MATERIAL, PROGENY and UNMODIFIED DERIVATIVES. The MATERIAL shall not include: (a) MODIFICATIONS, or (b) other substances created by the RECIPIENT through the use of the MATERIAL which are not MODIFICATIONS, PROGENY, or UNMODIFIED DERIVATIVES.
6. PROGENY:
   Unmodified descendant from the MATERIAL, such as micro-organism from micro-organism and/or recombinant DNA from recombinant DNA.
7. UNMODIFIED DERIVATIVES:
   Substances created by the RECIPIENT which constitute an unmodified functional subunit or product expressed by the ORIGINAL MATERIAL. Examples include: cloned/subcloned ORIGINAL MATERIAL, purified or fractionated subsets of the ORIGINAL MATERIAL, and proteins expressed from DNA/RNA supplied by the PROVIDER.
8. MODIFICATIONS:
   Substances created by the RECIPIENT which contain/incorporate the MATERIAL.
9. COMMERCIAL PURPOSES:
   The sale, lease, license, or other transfer of the MATERIAL or MODIFICATIONS to a for-profit organisation. COMMERCIAL PURPOSES shall also include uses of the MATERIAL or MODIFICATIONS by any organisation, including RECIPIENT, to perform contract research, to screen compound libraries, to produce or manufacture products for general sale, or to conduct research activities that result in any sale, lease, license, or transfer of the MATERIAL or MODIFICATIONS to a for-profit organisation. However, industrially sponsored academic research shall not be considered a use of the MATERIAL or MODIFICATIONS for COMMERCIAL PURPOSES per se, unless any of the above conditions of this definition are met.
10. NONPROFIT ORGANIZATION(S):
    A university or other institution of higher education or an organisation exempt from taxation or any non-profit scientific or educational organisation qualified under a state nonprofit organisaton statute.

PI

II. Terms and Conditions of this Agreement:

1. The PROVIDER retains ownership of the MATERIAL, including any MATERIAL contained or incorporated in MODIFICATIONS.

2. The RECIPIENT retains ownership of:

   (a) MODIFICATIONS (except that, the PROVIDER retains ownership rights to the MATERIAL included therein), and

   (b) those substances created through the use of the MATERIAL or MODIFICATIONS, but which are not PROGENY, UNMODIFIED DERIVATIVES or MODIFICATIONS (i.e., do not contain the ORIGINAL MATERIAL, PROGENY, UNMODIFIED DERIVATIVES).

   (c) If either 2(a) or 2(b) results from the collaborative effort, joint ownership may be negotiated.

3. The RECIPIENT and the RECIPIENT SCIENTIST agree that the MATERIAL:

   (a) is to be used solely for teaching and academic research purposes;

   (b) will not be used in human subjects, in clinical trials, or for diagnostic purposes involving human subjects without the written consent of the PROVIDER;

   (c) is to be used only at the RECIPIENT organisation and only in the RECIPIENT SCIENTIST's laboratory under the direction of the RECIPIENT SCIENTIST or others working under his/her direct supervision; and

   (d) will not be transferred to anyone else within the RECIPIENT organisation without the prior written consent of the PROVIDER.

4. (a) The RECIPIENT and/or the RECIPIENT SCIENTIST shall have the right, without restriction, to distribute substances created by the RECIPIENT through the use of the ORIGINAL MATERIAL only if those substances are not PROGENY, UNMODIFIED DERIVATIVES, or MODIFICATIONS.

   (b) Under a separate implementing letter to this Agreement (or an Agreement at least as protective of the PROVIDER's rights), the RECIPIENT may distribute MODIFICATIONS to NONPROFIT ORGANIZATION(S) for research and teaching purposes only.

   (c) Without written consent from the PROVIDER, the RECIPIENT and/or the RECIPIENT SCIENTIST may NOT provide MODIFICATIONS for COMMERCIAL PURPOSES. It is recognised by the RECIPIENT that such COMMERCIAL PURPOSES may require a commercial license from the PROVIDER and the PROVIDER has no obligation to grant a commercial license to its ownership interest in the MATERIAL incorporated in the MODIFICATIONS. Nothing in this paragraph, however, shall prevent the RECIPIENT from granting commercial licenses under the RECIPIENT's intellectual property rights claiming such MODIFICATIONS, or methods of their manufacture or their use.

5. The RECIPIENT acknowledges that the MATERIAL is or may be the subject of a patent application. Except as provided in this Agreement, no express or implied licenses or other rights are provided to the RECIPIENT under any patents, patent applications, trade secrets or other proprietary rights of the PROVIDER, including any altered forms of the MATERIAL made by the PROVIDER. In particular, no express or implied licenses or other rights are provided to use the MATERIAL, MODIFICATIONS, or any related patents of the PROVIDER for COMMERCIAL PURPOSES.

6. The RECIPIENT is free to file patent application(s) claiming inventions made by the RECIPIENT through the use of the MATERIAL but agrees to notify the PROVIDER prior filing a patent application claiming MODIFICATIONS or method(s) of manufacture or use(s) of the MATERIAL.

7. Any MATERIAL delivered pursuant to this Agreement is understood to be experimental in nature and may have hazardous properties. The PROVIDER MAKES NO REPRESENTATIONS AND EXTENDS NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED. THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A

PARTICULAR PURPOSE, OR THAT THE USE OF THE MATERIAL WILL NOR INFRINGE ANY PATENT, COPYRIGHT, TRADEMARK, OR OTHER PROPRIETARY RIGHTS.

8. Except to the extent prohibited by law, the RECIPIENT assumes all liability for damages which may arise from its use, storage or disposal of the MATERIAL. The PROVIDER will not be liable to the RECIPIENT for any loss, claim or demand made by the RECIPIENT, or made against the RECIPIENT by any other party, due to or arising from the MATERIAL by the RECIPIENT, except to the extent permitted by law when caused by the gross negligence or wilful misconduct of the PROVIDER.

9. This Agreement shall not be interpreted to prevent or delay publication of research findings resulting from the use of the MATERIAL or the MODIFICATIONS. The RECIPIENT SCIENTIST agrees to provide appropriate acknowledgement of the source of the MATERIAL in all publications.

10. The RECIPIENT agrees to use the MATERIAL in compliance with all applicable statutes and regulations, including guidelines such as, for example, those relating to research involving the use of animals or recombinant DNA.

11. This Agreement shall come into force on ---------- and will terminate on----------.

12. Paragraphs 6, 9, and 10 shall survive termination.

The MATERIAL is provided at no cost, or with an optional transmittal fee solely to reimburse the PROVIDER for its preparation and distribution costs. If a fee is requested by the PROVIDER, the amount will be indicated at the end of the MTA.

The PROVIDER will forward the MATERIAL to the RECIPIENT SCIENTIST upon receipt of the signed copy from the RECIPIENT organisation.

ORIGINAL MATERIAL

1. (Enter description) [Clone name; by WEB-Interface?]

   _____

   _____

   _____

   _____

2. Optional Termination Date: _____

3. Optional Transmittal Fee (to reimburse the PROVIDER for preparation and distribution costs) Amount: $ _____

APPENDIX D
Non-Disclosure Agreement

MUTUAL NONDISCLOSURE AGREEMENT

This Agreement is made between:

Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V. ("MPG"), represented for purposes of this Agreement by [Name of representative, Tel. number, Fax number, Email address.], with offices at the Max-Planck-Institut für ..... [address of MPI]

AND

[Name of the contractual partner] ("Contractual Partner") with offices at [address], and whose representative for purposes of this Agreement is [Name of representative, Tel. number, Fax number, Email address.]

(each a "Party" and collectively the "Parties").

During the course of discussions between the Contractual Partner and MPG relating to and for the purpose of ..... ("Purpose"), each party may disclose to the other information it considers proprietary and confidential which (a) relates to the Purpose, and (b) has been identified in writing as confidential ("Confidential Information"). As used herein, the party disclosing Confidential Information is the "Disclosing Party" and the party receiving the Confidential Information is the "Receiving Party". In connection therewith, the parties agree as follows:

1. The Receiving Party may use Confidential Information of the Disclosing Party only for the Purpose. The Receiving Party will not, at any time, use the Confidential Information of the Disclosing Party in any fashion, form, or manner, except in furtherance of the Purpose.

2. The Receiving Party will protect the confidentiality of the Disclosing Party's Confidential Information in the same manner it protects the confidentiality of its own proprietary and confidential information. Access to the Confidential Information shall be restricted to Receiving Party's directors, officers, employees and agents with a need to know to for the Purpose.

3. Confidential Information disclosed hereunder shall at all times remain, as between the parties, the property of the Disclosing Party. No license under any trade secrets, copyrights, or other rights is granted by this Agreement or any disclosure of Confidential Information hereunder.

4. Confidential Information of the Disclosing Party may not be copied or reproduced by the Receiving Party without the Disclosing Party's prior written consent, except as is required for the Purpose.

5. All Confidential Information made available hereunder, including copies thereof, shall be returned to the Disclosing Party upon the first to occur of (a)

completion of the Purpose or (b) request by the Disclosing Party.

6. Nothing in this Agreement shall prohibit or limit either party's use of information (including but not limited to ideas, concepts, know-how, techniques, and methodologies) (i) previously known to it , provided that such prior possession is supported by a written evidence, (ii) independently developed by it without the benefit of any disclosure by the Disclosing Party as evidenced by written records of the Receiving Party, (iii) properly and lawfully acquired by it from a third party without any obligation of secrecy, or (iv) which is or becomes publicly available through no breach by the Receiving Party.

7. In the event a Receiving Party receives a subpoena or other validly issued administrative or judicial process demanding Confidential Information of the Disclosing Party, the Receiving Party shall promptly notify the Disclosing Party and tender to it the defense of such demand. Unless the demand shall have been timely limited, quashed or extended, the Receiving Party shall thereafter be entitled to comply with such demand to the extent permitted by law. If requested by the Disclosing Party, the Receiving Party shall provide reasonable cooperation (at the expense of the Disclosing Party) in the defense of a demand.

8. Subject only to its confidentiality and non-disclosure obligations as set forth in this Agreement, each party's right to develop, use, and market products and services similar to or competitive with the Confidential Information of the other party shall remain unimpaired. Each party acknowledges that the other may already possess or have developed products or services similar to or competitive with those of the other party disclosed in the Confidential Information.

9. Neither party may use the name of the other in connection with any advertising or publicity materials or activities without the prior written consent of the other party.

10. This Agreement shall become effective as of the date Confidential Information is first made available to the Receiving Party hereunder for a period of ..... years unless sooner terminated pursuant to or in connection with any agreement or otherwise between the parties.

11. This Agreement shall be governed by the laws of Germany.

Agreed and Accepted:	Agreed and Accepted:
MPG	Contractual Partner
By:_____	By:_____
Signature	*Signature*
Printed name	*Printed name*

APPENDIX F
Outline of Research Projects

The major focus of the Center will be on (bio)molecular interfaces and nanostructures. This topic will be complemented by two cross-sectional activities, namely nanoscale analytics/fabrication and molecular modeling, which provide the experimental and theoretical foundations of the research program, respectively.

One of the major challenges of modern chemistry and biology and its translation to medical research is to decipher the mechanisms whereby living systems such as cells sense their complex environment and integrate this information to develop a response. Molecular recognition is fundamental to essentially all life phenomena at varying length scales from molecular to cells and tissues. Correspondingly, the strategic research activities will comprise the study of (bio)molecular interfaces at the following three levels: (i) single-molecular level : tools/approaches to probe and manipulate single molecules; (ii) inter-biomolecular level : biomolecular sensing (ultrasensitive and highly selective multi-analyte detection both in vitro and in vivo); and (iii) cellular level : cellular interfaces and interactions with nanomaterials (biomedical applications).

At the single-molecule level, different types of biologically relevant molecules will be investigated using various nanoanalytical methods, most prominently scanning probe microscopy (Brune, Radenovic, Kern,). While a large amount of fundamental information has been gained using such techniques in ultrahigh vacuum (UHV), their application to biomolecules is still in its infancy. The controlled deposition of biomolecules on surfaces in UHV, however, faces major obstacles since these organic compounds are highly labile and decompose under thermal treatment. A promising solution to this problem is the preparation of well-controlled ion beams of organic molecules ranging from small peptides to high mass proteins by electrospray ionization, which brings the molecules from solution into ultra-high vacuum (Osterwalder, Rizzo, Meijer). This technique allows the mass-selective deposition of complex soluble organic matter onto various substrates. In addition, the ion beam can be manipulated to study the unfolding of proteins, their fragmentation and behavior under soft landing conditions (Kern). These experiments will be complemented by ab-initio calculations of the molecular conformation and interactions (Marzari, Grubmüller, Scheffler). Furthermore, efforts are currently being directed toward transferring solid-supported molecules from UHV environment to media of biological relevance such as aqueous electrolyte solutions (Radenovic, Kern). In this manner, it should become possible to determine the influence of solvation or ionic interactions on the arrangement of the substrate-bound molecules. This opens up further exciting perspectives, in particular to investigate multi-electron transfer processes at surfaces acting as biomimetic model catalysts capable of promoting, e.g., the reduction of oxygen. For this purpose, novel strategies for the direct self-assembly on surfaces employing low-coordinated metal ions in a well-defined organic matrix shall be devised (Grätzel, Stellacci, Kern, Maier, Schlickum). Importantly, the gas phase preparation allows the structural characterization of the electrode surfaces by in situ scanning probe methods at the atomic level. The structural properties can thus be directly correlated with the electrocatalytic activities obtained in close connection to the preparation facilities (Stellaci, Grätzel, Maier, Kern, Lotsch).

Besides electrocatalysis, also biomimetic photocatalysis is of considerable interest. Significant effort has recently been directed toward photodynamic therapy of malignant cells or pathogens. Among other oxides, TiO2 nanoparticles are mostly investigated for applications in this field. The particles' activity can be further enhanced by functionalizing their surface with an appropriate organic sensitizer. The achievable efficiency depends on the charge transfer kinetics at the interface between the oxide and the dye molecules. Thus, we aim to gain a better understanding of the underlying mechanisms and limitations of these charge transfer processes through studies on model oxide surfaces. This includes the design of novel dyes specifically tailored for absorption within a certain energy range, and to explore the dye crafting on the mesoscopic semiconductor surfaces (Fontcuberta, Grätzel, Kern, Maier, Wodtke). In the characterization of dye molecules on specially prepared TiO2 surfaces, effective synergy is expected by combining ESI methods and scanning probe techniques (Kern) with time-correlated single photon measurements (Wodtke). Moreover, complementary surface

spectroscopic and electrochemical methods shall lead to a detailed understanding of the photochemical properties of these systems (Grätzel, Maier, Lotsch).

At the inter-biomolecular level, studies of antigen-antibody, ligand-receptor and nucleic acid-protein interactions are required for developing novel and highly sensitive detection strategies in molecular diagnostics. Within the Center, carbon nanotubes, inorganic nanowires and graphene nanostructures shall be utilized as electrical transducers, complemented by different types of nanochannels as optical confinement frameworks, toward the highly sensitive and selective detection of biomarkers (Fontcuberta, Forro ,Kippenberg, Balasubramanian, Kern, Lotsch). On this basis, the multiplex detection of such biomarkers in realistic biological samples shall be eventually achieved. A second topic top be addressed is in silico drug design, which can strongly benefit from deeper insights into protein–peptide (–protein, –membrane) binding processes, as well as protein folding. Along this direction, researchers participating in the Center (Rizzo) have demonstrated the use of conformer-selective, cold-ion infrared spectroscopy and experimentally constrained calculations to solve the 3D structure of a natural antibiotic, gramicidin S (GS), isolated in the gas phase. This shall be extended to more complex molecules in close collaboration between groups with complementary expertise, specifically by coupling surface deposition experiments (Rizzo, Kern) with atomic scale microscopy and spectroscopy techniques (Osterwalder, Rizzo, Meijer, Kern, Scheffler, Wodtke). In accompanying experiments, intra- and inter-molecular interactions will be studied directly on surfaces with ultimate resolution in experiment and theory (Brune, Marzari, Kern, Scheffler). A third research focus will be on exploring the role of excited molecular states and energy dynamics in (bio)molecular assemblies and interfaces. Energy dynamics and transfer at the molecular level constitute the basis of the conduction of nerve pulses, photosynthesis, and muscular activity. The Center provides an optimal platform for fundamental studies of these processes at a wide range of surfaces and molecular interfaces. For example, observations of electron emission from low work function surfaces resulting from collisions of highly vibrationally excited molecules have provided direct evidence of the conversion of internal (vibrational) energy of a molecule to electronic excitation of a solid (Beck, Rizzo, Wodtke). Such behavior is of direct relevance for all (bio)chemical reactions wherein chemical and electrical energy are intrinsically interrelated (e.g., ATP synthase). The successful interpretation of the experimental results requires support from theory, which will be provided in the form of first-principles calculations by EPFL (Marzari) and MPG groups (Grubmüller, Scheffler).

With respect to the cellular level, the nature of the environmental features sensed by living systems and the mechanisms underlying cellular responses are still largely obscure. The complexity of these interactions is reflected for instance by an enormous number of possible, relatively low affinity interactions between transcription factors and their nucleotide binding sites. These interactions can be explored with the aid of highly integrated fluidics circuits with in vitro transcription and translation approaches to generate an on-chip model of the transcriptiome (Maerkl). Only a combined fundamental and engineering approach will enable gaining a deeper understanding of environmental signaling processes and complex interactions at biomolecular interfaces. This task shall be reached by complementary studies of the interactions of nanomaterials with cells and the properties of cell surfaces in complex matrices (Hubbell, Swartz, Spatz, Böhm). In this context, it is also of interest to use inorganic nanowires for studies on cell guidance and adhesion, as well as the registration of electrical activity along neurons. Prospective candidates in this respect are semiconductor nanowires like InP, as synthesized by researchers at EPFL (Fontcuberta) and MPG (Kern), whose surface can be easily functionalized. Arrays of such wires will furthermore be used to measure cellular forces in vitro. This shall be accomplished by detecting the deflection of the nanowire tips using confocal microscopy. Such experiments are expected to yield valuable information about the path finding characteristics of growing nerve cells and neural regeneration (Hubbell, Swartz, Spatz, Pacholski).

An important cross-sectional activity providing the experimental and technological basis within the Center is nanoscale analytics and fabrication . The member laboratories are using and developing an arsenal of highly sophisticated research tools that permit controlling and manipulating individual molecules with sub-Angstrom precision, and thereby to engineer nanoscale structures whose physical and chemical properties are unique functions of size and

shape (Brune, Stellacci, Kern). These tools include scanning probe microscopy and spectroscopy under ultra-high vacuum (UHV) (Brune, Kern) and in liquid environment (Radenovic, Kern), as well as aberration-corrected transmission electron microscopy (Hébert). Of further relevance are optical techniques for single molecule spectroscopy and manipulation, and the development of novel, label-free molecular recognition of ligand-receptor binding with single molecule sensitivity (Forro, Kippenberg, Balasubramanian, Kern).

The function of large molecules like proteins and nucleic acids is determined by their three-dimensional structure, which depends on a fine balance between non-covalent intramolecular interactions and those with the solvation shell. To exploit the molecules' specific functionality, it is necessary to gain control over these interactions in solution and at interfaces. Members of the Center have developed elaborate schemes to bring large functional molecules into the gas phase (Meijer, Osterwalder, Rizzo), to manipulate their conformation (Rizzo), orientation (Meijer), internal degrees of freedom (Beck, Wodtke), and to control energy transfer processes during surface scattering (Wodtke) and deposition (Kern). This combined expertise is unique to develop novel approaches to understand and engineer (bio)molecular interfaces and nanostructures.

Another cross-sectional activity involves molecular modeling, with the major objective of predicting the properties and functions of materials, nanoscale clusters, and biomolecules. This task requires accurate simulation of their electronic structure and their statistical-mechanics properties at realistic temperature. In nano structures, in particularly at their surfaces and interfaces to the environment, atoms behave very differently to their counterparts in the crystal bulk. For example, vibrational motion and structural (or conformational) changes, electron-phonon coupling, and chemical reactions will likely play a decisive role. These issues call for a carefully interlinked hierarchy of different methods, also addressing the enormous timescales involved (from femtoseconds to seconds and longer). Furthermore, although the length-scale of the systems we are interested in is at the nanoscale, a connection with a larger length scale may be required in order to incorporate the effect of the environment. For poly-atomic systems, density-functional theory (DFT) is the workhorse in electronic structure theory. Along this direction, the Center aims to develop novel computational approaches that can be successfully applied to strongly correlated materials (e.g., transition-metal oxides), defects in semiconductor oxides, and f-electron systems. Similarly, new methods shall be devised for van der Waals interactions that are crucial for modeling biomolecules or organic/inorganic hybrid materials. In a further step, it is planned to refine ab initio molecular dynamics (MD) simulations, with the ultimate goal to link them to the master equation of statistical mechanics. Thus, a systematic linkage of scales from basic theoretical concepts to actual experiment-accessible quantities and targets shall be achieved. With Profs. Grubmüller (MPI-BPC), Marzari (EPFL) and Scheffler (FHI) some of the world leading groups are contributing, which already have manifold interactions with experimental groups in the Center.

Max Planck-EPFL Center for Molecular Nanoscience and Technology

Implementation & Operation Rules

Article I (Center Activities)

The Center will focus on research in the field of Molecular Nanoscience and Nanotechnology. The following institutes of the Ecole Polytechnique Fédérale de Lausanne (EPFL) and the Max Planck Society (MPG) will actively participate in the Center and shape its realization:

EPFL: EPFL-IBI, Interfaculty Institute of Bioengineering; EPFL-ICMP, Institute of Condensed Matter Physics; EPFL-IMX, Institute of Materials; EPFL-ISIC, Institute of Chemical Sciences and Engineering.

MPG: FHI, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin; MPI-BPC, Max-Planck-Institut für Biophysikalische Chemie, Göttingen; MPI-FKF, Max-Planck-Institut für Festkörperforschung, Stuttgart; MPI-IS; Max-Planck-Institut für Intelligente Systeme, Stuttgart.

EPFL faculty and MPG scientists outside these institutes can participate via joint projects upon authorization by the Scientific Board (see Article II).

In the framework of the Center, the following collaborative activities are planned and will be supported:

a) joint research projects conducted by scientists of both parties;
b) joint seminars, symposia, and other scientific meetings;
c) joint graduate school offering research training opportunities for PhD students;
d) visiting opportunities for scientists and PhD students between the parties,
e) joint laboratory on EPFL campus;
f) appointment of EPFL researchers as Max-Planck Fellows,
g) appointment of Max-Planck researchers as Visiting Scientists or Distinguished Visiting Professors at EPFL; and
h) other cooperative activities needed for implementing the joint research.

The initiative for and the planning of these activities will be taken by scientists of both Parties and coordinated by the "Scientific Board".

Article II (Organization)

The Center shall have no legal capacity of its own.

The Center activities will be directed by two scientists named by the Presidents of EPFL and MPG. Appointed Center Heads for the first funding period are Thomas Rizzo

81

(EPFL) and Klaus Kern (MPG). The Center Heads will chair a Scientific Board (SB) comprised of two additional Max-Planck directors and two EPFL professors. The composition of the SB will be determined by the Center Heads. SB members are chosen to ensure adequate expertise in the research areas covered by the Center. For the first funding period Matthias Scheffler and Alec Wodtke, representing MPG, and Benoit Deveaud-Plédran and Jeffrey Hubbell, representing EPFL, are appointed. The Center Heads will report to the Vice Presidents of EPFL and MPG.

Article III (Implementation and Funding)

Each Party will be fully and independently responsible for all aspects of housing, funding and equipping the Center at their location and will separately fund their own scientists, other staff, facilities, equipment, etc.. Therefore the operation of the Center is subject to the applicable laws and regulations of both Parties. The Center will be financed by each partner bearing the respective costs it incurs to realize the joint research program. Both Parties have approved and assigned equivalent funding for the Center:

	2013	2014	2015	2016	2017
MPG	480 k€	580 k€	700 k€	700 k€	700 k€
EPFL	480 k€	580 k€	700 k€	700 k€	700 k€

Equipment and samples owned by a Party may be loaned or made available to the other Party, such loans or disposals will be subject to separate agreements, e.g., material transfer agreements between the involved institutes.

Scientists will become participants of the Center when they are chosen by the SB to work on a Center project. Employment decisions are up to each Party, but a scientist's participation in Center activities will be determined by the Parties jointly.

All Center activities shall be based on reciprocity and should be performed on a basis of mutuality and equality insofar as possible.

Article IV (Specific Programs)

Joint Research Projects / Postdoctoral Fellowships / PhD Fellowships

The Max-Planck-EPFL Center for Molecular Nanoscience and Technology seeks to enhance opportunities for collaborative activities between MPG and EPFL investigators through funding of joint research projects. The Center will be presented by a web page which will illustrate in detail its research profile and mission. Financial support will be provided for hiring postdoctoral researchers for a period of up to 2 years and PhD students up to 4 years. Employment conditions are determined by the applicable laws and regulations of the hosting Party. Proposals can be submitted to the SB annually with a deadline of April 30 (in 2012 exceptionally June 30). The call will be publically announced in due time on the Center homepage.

Projects must have clear relevance to areas supported by the Center activitites. A high degree of interaction between MPG and EPFL investigators is a mandatory requirement for further consideration of the proposal. The written proposal should not exceed 2 pages and provide key information on the planned research, the envisioned collaboration and requested funding.

The SB will evaluate the received proposals and prioritize them based on scientific quality and added value of the collaboration. Funds will be distributed according to availability and the budget laid down in Appendix B of the Agreement, taking into account the global balance between MPG and EPFL contributions. Funding decisions will be communicated within two months following the proposal deadline.

Graduate School

The Max-Planck-EPFL Graduate School on Molecular Nanoscience and Technology (EDOC-MNST) will equally be presented by a web page, which will describe in detail its research and training profile. In order to attract prospective graduate students, the Research School and the benefits of its educational program will be extensively advertised. The joint doctoral program will be announced in parallel on the EPFL web page as MPG-EPFL Initiative on the Doctoral School EDOC platform. EDOC-MNST PhD students will be admitted to one of the participating doctoral programs at EPFL. Participating Doctoral Programs are EDPY-Physics, EDCH-Chemistry, EDMX-Materials Science and EDBB-Biotechnology and Bioengineering.

Doctoral students will be selected according to the selection procedures of the participating doctoral programs. Enrolment in the EDOC-MNST program requires funding through one of the Center Joint Research Projects (Article IV) or through other projects funded jointly or individually by the Parties. The SB takes the final decision of acceptance of students in the EDOC-MNST program.

The enrolled students must comply with the « Ordonance et Directives sur la formation doctorale à l'Ecole Polytechnique Fédérale de Lausanne ». Students who are already registered in one of the above EDOC programs can additionally be enrolled in EDOC-MNST upon approval by SB. The thesis research projects will be arranged in a way that the students working at MPIs should spend some time at EPFL partner labs and vice versa. Employment conditions of the PhD students are determined by the applicable laws and regulations of the hosting Party.

EPFL will grant Max-Planck members of the Center, who hold a position comparable to EPFL faculty (director – full professor, research group leader – associate professor and junior research group leader – assistant professor) the right to act as thesis director. Selected center members from MPG can be nominated as "Professeur Titulaire" by the EPFL president. Applicable EPFL laws and regulations apply.

Master Student Program

The Center offers the possibility to EPFL master students in Physics, Chemistry, Materials Science or Bioengineering to actively participate in the research of the member Max Planck Institutes and to do their master project at FHI, MPI-BPC, MPI-FKF or MPI-IS. The master project is scheduled for duration of minimum 17 weeks and maximum 25 weeks. It will be jointly supervised by an EPFL professor and a MPG Center participant.

Even though they remain registered as EPFL students, when students do their master projects at MPIs, they are subject to the rules of the host institution: work schedule, holidays, confidentiality, etc. The students remain subject to the registration deadlines and thesis submission deadlines specified in the EPFL academic calendar.

Possible master thesis projects at MPIs will be posted on the Center homepage annually in June, identifying the responsible scientists at EPFL and MPG the students are encouraged to contact. Center members propose the candidates they would like to support to the SB. The SB will evaluate the candidates and prioritize them based on scientific quality and added value of the collaboration. Funds will be distributed according to availability. Selected candidates receive a monthly fellowship during their stay at the MPIs.

Short term internships of EPFL students at MPIs can also be supported on an ad hoc basis upon approval by SB.

Joint MPG-EPFL Laboratory

The core of the Center will be the joint Laboratory for Molecular Nanoscience on EPFL campus. The joint laboratory will be directed by Prof. Kern and serves as a nucleus for the Center. EPFL will provide appropriate laboratory and office space and grant full access to its scientific and technical infrastructure.

The laboratory will operate as EPFL cost center with applicable laws and regulations of EPFL. The annually allocated budget is up to € 200'000 (see Appendix B of the Agreement),- but shall not fall below CHF 260'000,- p.a. to compensate for currency exchange variations. The budget covers personal, running and equipment costs. Staff will be employed by EPFL. EPFL assumes legal responsibility for the Laboratory One scientific collaborator can be hired with a fixed term up to five years. The laboratory is free to seek for additional third party funding complying with EPFL rules.

Visiting Scientists and Distinguished Visiting Professorships

MPG members of the Center can be appointed as Visiting Scientists or Distinguished Visiting Professors at EPFL to stimulate the mutual interaction. They will have access to the research infrastructure at EPFL and can actively participate in teaching and research activities of the participating EPFL laboratories. The EPFL labs can provide extra resources to support these activities.

The nomination and compensation of Visiting Scientists and Distinguished Visiting Professors is determined by SB in accordance with the applicable laws and regulations of EPFL. Travel costs are covered according to the rules specified below for travel arrangements.

Max-Planck Fellows

To strengthen the Center cooperation members of the EPFL faculty can be appointed as Max-Planck Fellows according to MPG rules and regulations. They will have access to the research infrastructure of the nominating partner MPI and can actively participate in the research activities. The MPIs can provide extra resources to support these activities.

The nomination and compensation of Fellows is subject to the applicable laws and regulations of MPG. Travel costs are covered according to the rules specified below for travel arrangements.

Workshops & Summer/Winter Schools

The Parties will organize an annual Science Day (in the form of a two-day workshop) discussing the progress of the scientific collaboration. Oral or poster presentations of the principal investigators, postdoctoral associates and graduate students on their ongoing research will be an integral part of this event. In even numbered years the Sience Day will be organized at EPFL, in odd numbered years it takes place at one of

the participating Max-Planck-Institutes. Local costs are covered by the hosting Party. Travel costs are covered according to the rules specified below. PhD students and postdocs are encouraged to organize regularly Young Researchers Meetings, which are subject to equivalent funding schemes.

Important ingredients of the EDOC-MNST curriculum are annual summer/winter schools on specific topics of multidisciplinary character. These courses offer an intense, multidisciplinary training program, in order to acquaint the students with a new scientific culture and environment at an early stage of their careers, and thus aid them to explore opportunities for graduate and postdoctoral study. The summer/winter schools will be organized jointly by both Parties, with the details planned by the SB or a subcommittee nominated by SB. They usually last one week and involve lectures by international experts (both internal and external). Local costs (including infrastructure, organization, etc.) are covered by the hosting Party within the budgetary appropriations by the Parties. General costs (e.g. travel costs of external experts) are covered equally by both parties within the budgetary appropriations by the Parties. Travel costs of participating students and scientific Center members are covered according to the rules specified below. For schools taking place at a non-partner location, costs are equally shared and the sending Party is solely responsible for covering the travelling costs of the students and scientific Center members. Equivalent rules hold for joint workshops organized by the Center.

Travel
Travelling expenses (travel and accommodation) associated with the collaboration will be shared by the Parties. The sending Party will cover travel costs while the host institution will cover accommodation. Research visits at a partner site up to two months are considered to be travel as far as in accordance with the rules and regulations of the respective party. For longer visits specific employment arrangements in agreement with the applicable laws and regulations of both Parties have to be taken.

Administration
MPG will provide a scientist who will support the Center coordination, assist the SB in administrative matters and look after the joint doctoral program. EPFL will provide secretarial support.

Annual Budget 2013

	Total (k€)	MPG (k€)	EPFL (k€)
PhD students	140	100	40
Coordinator	60	60	-
WinterSchool	-	-	-
PostDoc Projects	370	210	160
Master Students	20	20	-
Travel	60	30	30
Workshop	40	20	20
Visiting Profs	20	-	20
Joint Lab	180	-	180
Fellows	40	40	-
General Admin	30	-	30

Annual Budget 2014

	Total (k€)	MPG (k€)	EPFL (k€)
PhD students	180	100	80
Coordinator	70	70	-
WinterSchool	40	20	20
PostDoc Projects	420	250	160
Master Students	40	40	-
Travel	70	40	30
Workshop	40	20	20
Visiting Profs	40	-	40
Joint Lab	200	-	200
Fellows	40	40	-
General Admin	30	-	30

Annual Budget 2015-2017

	Total (k€)	MPG (k€)	EPFL (k€)
PhD students	240	150	90
Coordinator	70	70	-
WinterSchool	40	20	20
PostDoc Projects	480	260	220
Master Students	60	60	-
Travel	80	40	40
Workshop	40	20	20
Visiting Profs	60	-	60
Joint Lab	220	-	220
Fellows	80	80	-
General Admin	30	-	30