

Open Position for CsF candidates 2014/2015

Department/Institute:	Department of Biology, Chemistry, and Pharmacy
Subject Area:	Organic Chemistry
Name of Supervisor:	Jun.-Prof. Dr. Annabelle Bertin
Number of Positions:	1
Type of Positions	PhD
Project Title:	Synthesis and characterization of smart topologically controlled linear-block-dendronized ionomers for gene delivery
Project Description:	<p>Various conceptually different synthetic macromolecular structures (polymers, dendrimers, hyperbranched polymers, dendronized polymers) have been developed over the past decades to fulfill the criteria required in the field of gene delivery. Unfortunately, none of the macromolecular structures mentioned above is perfect and therefore linear-block-dendronized cationic ionomers with a controlled amount of cationic charges are seen as highly promising non-viral DNA or siRNA/miRNA carriers. The dendronized block is thought to introduce multivalency in the macromolecular construct, thus facilitating its interaction with nucleic acids. The linear block will be used to confer water solubility to the polymer or facilitate its self-assembly in aqueous solution.</p> <p>The project will involve:</p> <ul style="list-style-type: none">• Synthesis, characterization and modification of dendrons and polymers;• Transposition of organic reactions and polymerizations as microwave-assisted syntheses;• Study of the polyelectrolyte behavior of the synthesized polymers and their complexes with nucleic acids with the help of characterization methods such as dynamic light scattering, zeta potential measurements, etc.
Academic Requirements:	<p>Master in Chemistry (specialization organic chemistry preferentially)</p> <p>Lab experience required (organic synthesis, purification methods such as column chromatography and recrystallization) and the candidate should be familiar with analytical methods (NMR, IR, UV-Vis spectroscopies, and mass spectrometry).</p>
Language Requirements:	English (TOEFL > 100 points); German: Basic
Further Information:	http://www.bam.de/en/kompetenzen/fachabteilungen/abteilung_6/fg65/index.htm

**Further
Information on
Ciência sem
Fronteiras at FU
Berlin**

[http://www.fu-berlin.de/en/sites/brazil/Ciencia sem Fronteiras/index.html](http://www.fu-berlin.de/en/sites/brazil/Ciencia_sem_Fronteiras/index.html)

For further questions, please contact the Liaison Office of FU Berlin in São Paulo saopaulo@fu-berlin.de.

Application

<http://www.csf-alemanha.de/pt/>

While applying online via this website, **please make sure to also upload or send a copy of the following documents** to saopaulo@fu-berlin.de:

- letter of application and statement of purpose;
- academic CV (including former study programs, internships, publications);
- one or two letters of recommendation of distinguished professors of your university;
- Working plan/research plan.

Some of the above documents are also required by Capes, but FU Berlin needs an **English or German version of each of the listed documents**. The documents are required by the individual institution responsible for the acceptance process. They may enhance your chances to get accepted. A decision cannot be made unless they have fully been transmitted. For further questions, please contact saopaulo@fu-berlin.de.