

Grenoble, 20 April 2012

To whom it may concern:

This letter is to support the application of Dr. Ricardo Ferraz Leal for a post in the Computing for Science group at ILL.

Dr. Ricardo Leal has been working as Postdoc under my supervision since February 2009. He is directly involved in several projects that are mainly concerned with the development of new techniques and instruments for X-ray studies of macromolecular crystal structure using synchrotron radiation. One of aims was to further extend the work that Ricardo undertaken during his PhD thesis - engineer special software for X-ray data collection strategy planning and to apply this to a specific scientific target: the mitigation of radiation damage effects whilst collecting X-ray data from crystals of biomolecules. Ricardo successfully developed an automated procedure for the determination of the radiation damage rate incurred in a crystal, providing calibration and verification of a specific decay model. The information prepared by this method can be then used for definitive X-ray data collection of macromolecular crystals. The application of this method to different conditions, e.g. at room temperature experiments has shown very surprising outcome and we are now finalising a new publication on this subject. Ricardo has also developed in parallel other tasks on 3D crystal modelling from visual images as well as on the effects of the X-ray beam shape on crystal decay. The thorough understanding of these mechanisms is fundamental for developing an adequate data collection strategy planning. He is also participated in the development of data collection strategy using many crystals.

I am very pleased with Ricardo's progress to date. He is becoming a serious scientist, highly motivated, and very able. During the period of his postdoc, he has gone out of his way to learn and develop his knowledge of radiation damage effects on macromolecules and data collection strategy planning. In his first year working, he was awarded the prize of the best poster at 25th European Crystallography Meeting in the domain of Instrumentation. In my view there are too few people left in macromolecular crystallography that have serious insight into the principles and methodologies involved and it is very important to maintain and cultivate such capabilities at the EPN-Campus and also more widely in the crystallographic community. In summary, Ricardo has been an excellent Postdoc and his application to this job position has my full support.

If you would like any further input, please do not hesitate to ask.

Yours faithfully,

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