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Materials characterization by X-ray diffraction techniques

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Integrated in the General Research Services of the University of the Basque Country, the X-ray Unit provides the possibility to study single crystals, polycrystalline samples or amorphous materials, under a wide range of conditions. The available equipment enables structural studies starting from diffraction data of polycrystalline materials. This technique allows us to identify the crystalline phases presented in the samples, crystal size estimation, size/strain analysis, particle morphology or structural mean parameters study. The full profile simulation could give us all the structural information, perhaps compositional results and quantitative analysis of materials. On the other hand different equipments and configuration implemented in the service give us the possibility to; make high and low temperature measurements, layer thickness calculations, obtain deepness gradient information, texture analysis, stress measurements, crystal orientation, micro-diffraction, etc. The X-ray service supports basic and applied research through scientific and technical advice and the use of a high-performance infrastructure in materials analysis with applications in many areas of knowledge.



Biography

Aitor Larrañaga Varga has done his PhD from the University of the Basque Country in 2005 in Materials Science, concerning transition metal selenites. He was a Researcher in Materials Crystallography, Advanced Technician in General Research Services. He has done his specialization in material characterization techniques and result analysis. He has more than 50 international publications, 3 books chapters and more than 90 conference communications.

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