



UNIVERSIDADE FEDERAL DE SÃO CARLOS - UFSCar
Centro de Ciências Exatas e de Tecnologia – CCET
DEPARTAMENTO DE ENGENHARIA DE MATERIAIS – DEMa
PROGRAMA DE PÓS-GRADUAÇÃO EM CIÊNCIA E ENG. DE MATERIAIS - PPGCEM



INTERNATIONAL SEMINARS IN MATERIALS SCIENCE AND ENGINEERING OF DEMa/PPGCEM-UFSCar

IGNEOUS ROCKS: WHERE MINERALOGY, MATHEMATICS AND THERMODYNAMICS MEET

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Abstract:

In this talk, the assessment of the fluxing characteristics of Brazilian igneous rocks, driven by the on-going search for alternative mineral resources for the ceramics industry, is presented as a case study to illustrate the need to use complementary techniques from apparently unrelated science fields. After a short introduction about the requirements of today's ceramic raw materials, namely fluxes, Mineralogy is first called upon to sort out the rock samples (XRD petrographic observation and XRF chemical composition, condensed in the TAS and QAPF diagrams). Mathematics are then used to refine that classification using hierarchical cluster analysis and principal components analysis (HCA/PCA) based on the chemical composition. Thermodynamics (phase diagrams) wrap it up, providing the guided choices that demonstrate the important relationships between chemistry (XRF) and mineralogy (XRD): you are holding the whole of the earth in the palm of your hand.

Date: 15th september 2021

Time: 4 pm (São Carlos time)

Location: link <https://meet.google.com/oqt-dkmf-sno>