



A treasure chest full of nanogranitoids: an archive to investigate crustal melting in the Bohemian Massif

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The central European Bohemian Massif has undergone over two centuries of scientific investigation which has made it a pivotal area for the development and testing of modern geological theories. The discovery of melt inclusions in high-grade rocks, either crystallized as nanogranitoids or as glassy inclusions, prompted the re-evaluation of the area with an 'inclusionist' eye. Melt inclusions have been identified in a wide range of rocks, including felsic/perpotassic granulites, migmatites, eclogites and garnet clinopyroxenites, all the result of melting events albeit over a wide range of pressure/temperature conditions (800–1000°C/0.5–5 GPa). This contribution provides an overview of such inclusions and discusses the qualitative and quantitative constraints they provide for melting processes, and the nature of melts and fluids involved in these processes. In particular, data on trace-element signatures of melt inclusions trapped at mantle depths are presented and discussed. Moreover, experimental rehomogenization of nanogranitoids provided microstructural criteria allowing assessment of the conditions at which melt and host are mutually stable during melting. Overall this work aims to provide guidelines and suggestions for petrologists wishing to explore the fascinating field of melt inclusions in metamorphic terranes worldwide, based on the newest discoveries from the still-enigmatic Bohemian Massif.