Evidence for Pre-Collisional (Acid)-Basic-Ultrabasic Magmatism in the Sergipano Orogenic System, Northeast Brazil

F.S. PEREIRA[1]*, M.L.S. ROSA[1], J.A. CONCEIÇÃO[2], A.L. BERTOTTI[3], H. CONCEIÇÃO[1]

[1]Laboratório de Petrologia Aplicada a Pesquisa Mineral, Pós-Graduação em Geociências, Federal University of Sergipe, Aracaju, Brazil (*corespondence: fabio.santos.pereira@hotmail.com)
[2]Pós-Graduação em Geologia/UFBA – UFOB, Brazil
[3]Federal University of Pernambuco, Recife, Brazil

More than sixty granitic stocks have been recognized in the Macururé Domain, which represents a Neoproterozoic (985-920 Ma) turbiditic wedge (13 km thick) of the Sergipano Orogenic System. Besides granites, there are four (acid)-basic-ultrabasic sets of magmatic associations: Camará, Arquidabã, Dores and Capela. These magmatic associations comprise diorites plus subordinate gabbros and monzonites in the Camará (Camará, Campo Grande and Pedra Branca stocks), Arquidabã (Mulungum and Coité stocks) and Dores (Canafistola stock) associations. These stocks have elongated shapes concordant with their deformed host rocks and with the regional structures. The mineralogy comprises: amphibole, corresponding to the Mg-hornblende and pargasite, low-Ti diopside, characteristic of calc-alkaline magmas, strongly zoned andesine-oligoclase crystals (An_{45}-An_{35}), and Mg-biotite. The geochemical data of these associations correspond to pre-collisional high-K calc-alkaline magmatism. The Capela magmatism (Pedras-1 and Pedras-2 stocks) is different from the previous ones, being characterized by acid-ultrabasic rocks and essentially composed of mildly alkaline hornblendites, gabbros, pyroxenites and peridotites plus almandine-monzonites and subordinate granites with shoshonitic signature. The arc signature in these post-collisional (acid)-basic-ultrabasic magmatisms, is interpreted as fragments of the Neoproterozoic oceanic crust, that has been consumed during the collisional event that was responsible for the final structuration of the Sergipano Orogenic System.
Acknowledgment: This work was supported by CNPq, CAPES and FAPITEC.