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COVER PICTURE: Shows a SEM image of a sample of a (beta) sialon ceramic which had been sintered at 1750°C for 5 hrs in nitrogen. A polished surface of the sample has been plasma etched for 30 seconds in a $\text{CF}_4 + 6\%\text{O}_2$ atmosphere, at 20 Pa, using a RF power supply of 500W. The plasma etching preferentially attacks the (beta) sialon grains in preference to the YSiAlON intergranular glass. Darker regions showing deeper etch pits represent the location of (beta) Si_3N_4 grains that have been completely removed by the etching process. The sample was provided by Nippon Steel Corporation of Tokyo, Japan and the etching and subsequent SEM investigation was performed by Dr. Philip Walls of ANSTO, Materials Division, Sydney.