A new family of iron oxide perovskites $A_{1-x}A'_xFeO_3$ ($A=$ Nd, Pr, La; $A'=$ Ca, Sr) has been studied for its potential use as cathodes in solid oxide fuel cells (SOFC). This is part of a collaboration between Basque Country University and Ikerlan Technological Research Centre (MCC Group) towards the development of metal supported intermediate temperature SOFC. Samples with a systematic change in doping level were prepared by the ceramic and combustion methods and characterised by laboratory X-ray powder diffraction and SEM. Electrochemical measurements were performed in the 600-850°C temperature range on bulk and as electrodes in YSZ supported half-cells. A summary of these results will be presented in this work.

K. Vidal, thanks to the Gobierno Vasco/Eusko Jaularitza for a doctoral fellowship.

Keywords: crystal structure determination x-ray powder data, perovskite structures, conductivity