Supplementary Information

Dielectric investigation on high-k Yttrium Copper Titanate thin films

Anna Grazia Monteduro\textsuperscript{a, b}, Zoobia Ameer\textsuperscript{a, b}, Maurizio Martino\textsuperscript{a}, Anna Paola Caricato\textsuperscript{a}, Vittorianna Tasco\textsuperscript{b}, Indira Chaitanya Lekshmi\textsuperscript{c, ◊}, Ross Rinaldi\textsuperscript{a, c}, Abhijit Hazarika\textsuperscript{d}, Debraj Choudhury\textsuperscript{d, e}, D. D. Sarma\textsuperscript{d, f, *}, Giuseppe Maruccio\textsuperscript{a, b, *}

\textsuperscript{a}Department Of Mathematics and Physics, University Of Salento, Via per Arnesano, 73100, Lecce, Italy
\textsuperscript{b}CNR NANOTEC - Istituto di Nanotecnologia, Via per Arnesano, 73100 Lecce, Italy
\textsuperscript{c}CNR NANO - Istituto Nanoscienze, Via per Arnesano, 73100 Lecce, Italy
\textsuperscript{d}Solid State and Structural Chemistry Unit, Indian Institute of Science, Bangalore, 560012, India.
\textsuperscript{e}Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur 721302, India
\textsuperscript{f}Council of Scientific and Industrial Research - Network of Institutes for Solar Energy (CSIR-NISE), New Delhi, India

\textsuperscript{◊}Present address: Dept of Chemistry, CMR Institute of Technology, 132, AECS layout, IT Park Road, Bangalore 560037.

*corresponding authors: giuseppe.maruccio@unisalento.it, sarma@sscu.iisc.ernet.in
Fig. S1 Frequency dependences of real ($\varepsilon'$) and imaginary part ($\varepsilon''$) of the complex permittivity in the frequency range 100Hz-1MHz for two YCTO films deposited at 0.1 Pa oxygen pressure with thickness $t_2=150\text{nm}$ and $t_3=50\text{nm}$. 
$Y|_{t^3}^{0.05}$ film modeled by using the UDR and modified Cole-Cole models. The UDR model is able to describe only the high frequency behaviour of the complex permittivity, while the modified Cole-Cole model fits the data over the whole frequency range.