Abstract Submitted for the MAR12 Meeting of The American Physical Society

Electrical properties of  $NaSr_2Nb_5O_{15}$  ferroelectric ceramic BA-NARJI BEHERA, School of Physics, Materials Research Laboratory, Sambalpur University, Jyoti Vihar, Burla - 768 019, Odisha, India, NIHAR PRADHAN, University of Massachusetts, Amherst and Mount Holyoke College, Massachusetts, USA, P. NAYAK, School of Physics, Materials Research Laboratory, Sambalpur University, Jyoti Vihar, Burla - 768 019, Odisha, India — Since the discovery of ferroelectricity, tungsten bronze (TB) ferroelectrics has been a rapid progress in search of new TB-type materials for applications such as capacitors, actuators, transducers, ferroelectric random access memory and display technologies. The materials with TB structure have potential advantages for devices because of their high dielectric constant and low tangent loss. In view of the above importance we have studied the electrical properties of  $NaSr_2Nb_5O_{15}$  (NSN) ferroelectric ceramic. The polycrystalline  $NaSr_2Nb_5O_{15}$  (NSN) was prepared by mixed oxide method at high temperature. Electrical properties of NSN have been studied using complex impedance spectroscopy (CIS) with wide range of frequency  $(10^2-10^6 \text{ Hz})$  and temperature. The complex impedance plot reveals the main contribution of bulk effect. The bulk resistance has been decreased with rise in temperature. The negative temperature coefficient of resistance (NTCR) manifests a semiconductor like behavior. The ac conductivity spectrum was found to obey Jonscher's universal power law.

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Date submitted: 08 Dec 2011

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