

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application : 08/02/2024

(21) Application No. 202411008591 A

(43) Publication Date : 16/02/2024

(54) Title of the invention : AN ULTRA LOW TEMPERATURE CO-FIRED CERAMIC (ULTCC) HAVING HIGH QUALITY FACTOR (Q X F) VALUE FOR USE IN MICROWAVE DEVICES AND METHOD OF PREPARATION THEREOF.

(51) International Classification : B82Y30/00, B82Y40/00, C04B35/01, C04B35/50, C04B35/64
(86) International Application No : NA
Filing Date : NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number : NA
Filing Date : NA
(62) Divisional to Application Number : NA
Filing Date : NA

(71) Name of Applicant :

1) Dr. Preeti Kumari

Address of Applicant : Dr. Preeti Kumari, Assistant Professor, Dept. of Electronics and Communication, JK Institute of Applied Physics and Technology, University of Allahabad, Prayagraj, Uttar Pradesh -----

Name of Applicant : NA

Address of Applicant : NA

(72) Name of Inventor :

1) Dr. Preeti Kumari

Address of Applicant : Dr. Preeti Kumari, Assistant Professor, Dept. of Electronics and Communication, JK Institute of Applied Physics and Technology, University of Allahabad, Prayagraj, Uttar Pradesh -----

(57) Abstract :
TITLE: An Ultra Low Temperature Co-fired Ceramic (ULTCC) having high quality factor (Qxf) value for use in microwave devices and method of preparation thereof. The present invention relates to an Ultra Low Temperature Co-fired Ceramic (ULTCC) having high quality factor (Qxf) value for use in microwave devices characterized in that the chemical formula of the dielectric material is as follows: $(1-x)\text{BaV}_2\text{O}_6-(x)\text{LiMgPO}_4$ wherein x lies in the range of 0.3 to 0.5, preferably 0.5; Qxf value of the dielectric material is 61,000 GHz; dielectric constant is 8.3; sintering temperature is 475-550, preferably 525; and the temperature coefficient of the resonant frequency is in the range of -40 to -30 ppm/. Further a method for preparation of the ULTCC dielectric material is also disclosed. The dielectric material shows excellent microwave dielectric properties with low dielectric constant and high quality factor for use in microwave devices. Figure 1

No. of Pages : 15 No. of Claims : 7

Preeti