

Dear Editor,

We submit the enclosed manuscript entitled “On the design and characterization of a microwave microstrip resonator for gas sensing applications” coauthored by G. Gugliandolo, D. Aloisio, G. Campobello, G. Crupi and N. Donato for consideration for publication in the Special Issue of ACTA IMEKO Journal. This article is a widely extended version of the conference proceeding presented at IMEKO TC-4 2020 Symposium, “Development and metrological evaluation of a microstrip resonator for gas sensing applications”, which is cited as reference [22]. Following on from the results of the previous proceedings version, we present a greatly improved and comprehensively extended investigation. A brief list of the new activities is reported below:

- The investigated range, in terms of relative humidity, has been extended up to 83 %rh. As a consequence, all the graphs have been updated.
- Both magnitude and phase of the reflection coefficient have been studied locally around the two resonant dips.
- The impedance (real and imaginary parts) associated to the measured reflection coefficient and its variation with the relative humidity has been included in the work.
- Instead of a second order polynomial function, an exponential function has been preferred in the calibration process because it provides lower residuals in the new investigated range.
- More details about the measurement system have been included in the manuscript.
- The bibliography has been extended.
- The work has been widely rewritten and all the figures have been updated.

Since the paper has been widely extended from the proceeding version, we would like it to be considered for the review process and publication on the Special Issue of ACTA IMEKO Journal.

Sincerely,

The authors