

## **The Soft X-Ray Microgap (MICROMEGAS) gas detector for WDXRF Spectrometers.**

### **Prototype Design and First Characterization Data.**

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Micromegas (MICRO-Mesh-Gaseous Structure) is a two stage gaseous parallel plate detector in which several innovative properties rely on a narrow amplification space, typically 50 – 100 um between two parallel electrodes. MICROMEGAS was invented in mid-nineties as a position sensitive detector for charged particles and demonstrate excellent time, energy and spatial resolution together with high gas gain close to  $10^5$ . Later it was found that the design of MICROMEGAS is offering substantial advantages for several applications, such as medical and technical X-ray and gamma imaging, neutron imaging, and rare events detection.

We present preliminary results on the design and characterization of the sealed gas detector for ultra-soft X-ray based on the MICROMEGAS concept. This detector is simple in design, has significantly higher counting rate than a conventional single wire proportional counter, very good energy resolution, and works at lower bias voltage. This detector is developed as a substitute of the single wire proportional gas flow counters in the WDXRF spectrometers.