

(12) **United States Patent**
Angelescu et al.

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(54) **MICROFLUIDIC DEVICE FOR ANALYZING A PRESSURIZED FLUID**

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(58) **Field of Classification Search**
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See application file for complete search history.

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1 day.

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(57) **ABSTRACT**

The invention relates to a microfluidic sensor for analyzing a fluid which is in a pipe and which is under a first pressure. The sensor includes a mixer for mixing amount of fluid from the pipe with at least one amount of a reactant from at least one tank, and an analyzer for analyzing the resulting mixture. The sensor further includes a sampling channel for sampling an amount of the fluid in the pipe, in order to supply the fluid the mixer and to pressurize the at least one tank. According to the invention, an outlet of the analyzer is subjected to a second pressure that is lower than the first pressure in the pipe, such that the fluid passively moves from the pipe towards the analyzer via the mixer, as well as towards the tank.

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17 Claims, 2 Drawing Sheets

