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The measurement principles, working parameters and configurations of voltammetric electronic tongues and its applications for foodstuff analysis

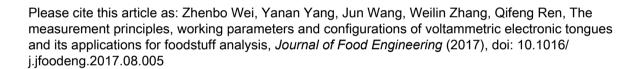
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ACCEPTED MANUSCRIPT

- Running title: A review of the development and application of VE-tongue
- 2 The measurement principles, working parameters and configurations of
- **voltammetric electronic tongues and its applications for foodstuff analysis**
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- 6 Abstract: Voltammetric electronic tongue (VE-tongue) is a promising technology for advanced sensing and
- 7 measurement applications. The review examines the measurement principles, working parameters and
- 8 configurations of different types of voltammetric electronic tongues (VE-tongue): the VE-tongue based on
- 9 bare electrodes, modified electrodes and biosensors. The working parameters of these VE-tongues (electrode
- 10 cleaning method, pulsed voltammetry and pre-processing of responses data) are described, and the
- development of VE-tongue based on miniaturized sensors arrays and automatic flow techniques is also
- presented. The applications of foodstuff analysis commented include recognition of basic tastes substances,
- tracing origins/samples recognition, process monitoring, and quality investigation. Finally, the unsolved
- problems and significant efforts of VE-tongues are depicted.
- 15 **Keywords:** Voltammetric electronic tongues; Foodstuff analysis; Metallic electrode; Modified electrode;
- 16 Biosensors; Pulsed voltammetry

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