

6. Conclusions

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The main conclusions that can be extracted from the previously presented work are as follows:

- A new method for the addition of metals on SnO₂ has been developed. The method is based on an electrochemical reaction and gives finely and homogeneously dispersed metal particles without contaminating the substrate when a suitable annealing is performed. The method has been tested for both Pd and Pt, that are the additives most used in gas sensors, thereby demonstrating its suitability as a general addition method for the obtention of gas-sensing materials.
- The study of the features of different metals, addition procedures and annealing temperatures for the obtention of SnO₂-based gas-sensing materials has allowed a better understanding of the different factors affecting the dispersion, behaviour and chemical state of the additives present on the SnO₂ surface.
- The systematic study of the electrochemistry of polycrystalline tin in borate buffer solutions that has been performed as a first stage for the study of electrochemical gas sensors based on tin oxide has permitted to increase the existent knowledge of the redox behaviour of the studied system.
- A chemical etching procedure has been developed for the preparation of both polycrystal and tin (100) single-crystal surfaces in order to perform electrochemical or SPM studies on them. This procedure simply consists on the immersion of the metal in a solution in ambient conditions, thereby obtaining an uncontaminated surface if properly cleaned.

7. References

7. References

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As it has been stated in the greetings part of this work, a Thesis is a work presented by one person, but it is not the work of this person alone, but of a number of people. This is also true when including the bibliography of the author of a Thesis: during a Thesis, the work related to the Thesis is, in general, not the only work that a certain person makes. Thus, along the years that it has taken for the author of this Thesis to finish the Ph.D. memory, he has collaborated with other people. Thus, in the following pages, the complete bibliography of the author will be summarised.

Congresses

- **190th Meeting of the Electrochemical Society, October 6-11 1996, San Antonio of Texas (USA).**
Oral presentation (P. Gorostiza):
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