DEVELOPMENT OF A QUALITY CONTROL SYSTEM FOR TRANSPARENT CONDUCTIVE OXIDES *

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When controlling the quality parameters of transparent conductive coatings, the problem of analyzing the causes leading to defects arises. The use of the following seven basic tools for quality control of methods with a 95% probability allows to solve the problem [1, 2]:

- control card;
- Pareto diagram;
- a checklist;
- bar graph;
- Ishikawa diagram;
- stratification;
- scatter diagram.

The authors developed the Ishikawa diagram, which systematizes causal relationships between process conditions and the quality parameters of transparent conductive coatings (Fig. 1 (a)). [3]

The Pareto diagram is designed to identify the most significant factors - the causes of defects in transparent conductive oxides. There are two types of Pareto diagrams: according to the results of activities and for reasons [4]. To assess the quality of transparent conductive oxides, the Pareto diagram and the cumulative Pareto curve for reasons are used (Fig. 1 (b))

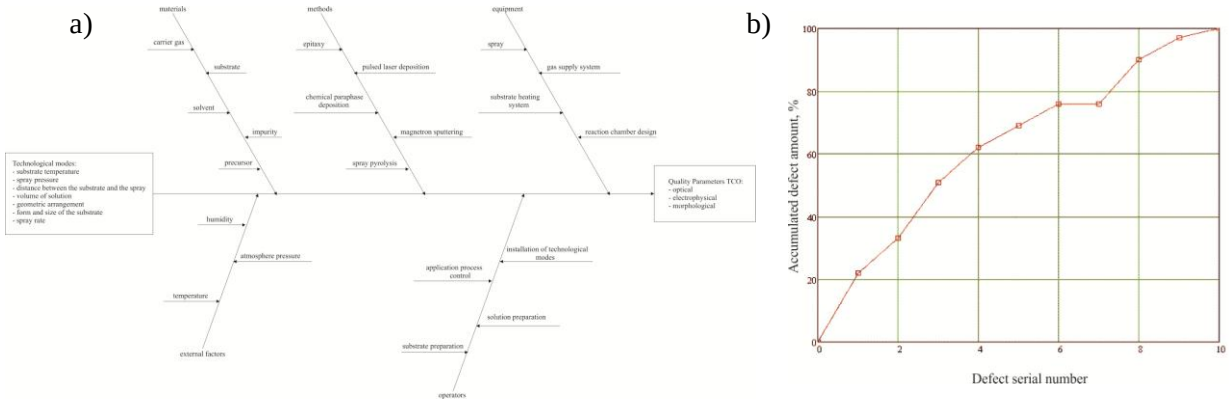

Fig.1. a) Ishikawa diagram for the TCO process b) Pareto cumulative curve.

The obtained results were introduced in the development of a technological process for the synthesis of transparent conductive oxides by spray pyrolysis.

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