methods described herein, without departing substantially from the essential features and concepts of the present invention. Accordingly, it should be clearly understood that the forms of the invention described herein are exemplary only and are not intended as limitations on the scope of the present invention as defined in the appended claims.

What is claimed is:

1. A method for analyzing polycrystalline electron diffraction data comprising:

(a) creating tables within a relational database, said tables comprising Code Ring data, Formula data, and Element data; wherein said Code Ring data includes information relating to the d-spacings of polycrystalline materials, said Formula data includes information relating to the chemical formulae of said polycrystalline materials, and said Element data includes information relating to the presence of elements in said polycrystalline materials of high atomic number;

(b) creating at least one macro for performing searches using said tables; said at least one macro including the steps of:

i) requesting input data relating to observed d-spacings, experimental error limits, and anticipated atomic numbers of an experimental sample;

ii) comparing said input data with the data in said tables and calculating a Figure of Merit (FOM) such that:

FOM=(matching *d*-spacings) −(missing *d*-spacings);

iii) generating at least one report listing in descending order the polycrystalline materials that have the highest FOM.

2. The method for analyzing polycrystalline electron diffraction data according to claim **1**, wherein said code ring data includes reduced unit cell parameters, and said step of comparing said input data includes calculating d-spacings produced by double diffraction.

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