Introduction to Thermoanalytical methods

Master studies in Materials and chemistry

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LITERATURE ON THERMAL ANALYSIS

I. Journals, reference books, conference series and hand books

1. JOURNALS

Thermochimica Acta (TA)
Journal of Thermal Analysis (JTA)

Both journals started in 1970. Both publish original research papers and sometimes review papers.

2. REFERENCE BOOKS

Chemical Abstracts (CA), own section for TA – CA now in SciFinder
Earlier also Thermoanalytical Abstracts as a separate book

3. CONGRESS PUBLICATIONS

ICTAC (every 4th year), ESTAC (every 4th year)
North America and Asia have their own conference series
4. **Handbooks**

Atlas of Thermoanalytical Curves I-V + index

**II MONOGRAFIES AND TEXTBOOKS**

- The first books on thermal analysis already in 1909
- P.J. Haines (toim.), *Principles of Thermal Analysis and Calorimetry*, 2002
5. PUBLICATIONS FROM INSTRUMENT MANUFACTURERS

For example Mettler Toledo, *User Com*, Information for users of Mettler Toledo thermal analysis systems. Mettler has also a handbook. Netzsch, TA instruments have their own news letters. Web-pages of the companies are informative.

6. CONFERENCE SERIES BY ORGANIZATIONS


ESTAC – European Symposium on Thermal Analysis and Calorimetry. Conference series which is organized every 4th year (10th 2010 Rotterdam, 11th Espoo 2014). Presentations are published in TA journals.

NOSTAC – Nordic Society (Symposium) for Thermal Analysis and Calorimetry. NOSTAC organized Nordic symposia but activity is now low.
Content of the lectures

1. Introduction and short history

2. Thermogravimetry
   - Instruments
   - Calibration
   - Factors affecting the results
   - Sources of errors
   - Applications
   - DTG (Differential thermogravimetry)
3. **Differential thermal analysis DTA** ja **differential scanning calorimetry DSC**
   - Principles of the methods
   - Instruments
   - Calibration
   - Effects of the measurement parameters
   - Applications

4. **Combined methods**

5. **Evolved gas analysis, EGA**

6. **Thermomechanical analysis methods, TD, TMA, DMA**

7. **High-temperature X-ray diffraction**

8. **Other TA methods**