

**Introduction to Mössbauer spectroscopy and some selected applications of the method for catalysts' studies**

(proposed preliminary program for a condensed course to be held at Dalian Institute of Chemical Physics by prof. Károly Lázár – Centre for Energy Research, Budapest, Hungary)

*Tentative schedule*

05/11/2019			
06/11/2019			
07/11/2019			

**Part 1 -Introduction**

**1.1. Basics of Mössbauer effect**

**1.2. Basics of Mössbauer spectroscopy (MS)**

**Experimental techniques**

**1.4. Evaluation of spectra (description with Lorentz lines – distribution of parameters - other codes)**

**1.5. Implementation of various techniques, performance of experiments**

**1.6. History – short retrospection – MEDC**

**Part 2. Mössbauer spectroscopy of catalysts**

**2.1. Assessment of MS from the aspect of catalysts' studies (with respect to catalytic processes)**

**2.2. Practical accomplishment – in situ cells**

### **2.3. Selected examples for catalysts studies**

Metals and alloys (Fisher-Tropsch,  $^{57}\text{Co}$  emission HDS, several Pt-Sn, Au-Sn, Rh-Sn)

$^{197}\text{Au}$  Mössbauer spectroscopy

oxides (spinel, zeolites, mesoporous catalysts, MOF-s)

\_\_\_\_\_ (Prussian blue, single atom catalysts)

### **3. Summary**

(Károly Lázár)