

FINAL PROGRAM AND ABSTRACTS OF PRESENTATION

Seventh Belgian-Hungarian Colloquium on Catalysis

SZEGED

October 4 - 7, 1993

House of the Hungarian Academy of Sciences
Somogyi u. 7., Szeged, Hungary



Organized by

Center for Catalysis, Surface and Material Science
of József Attila University, Szeged

Institute of Isotopes of the Hungarian Academy of Sciences, Budapest

Catalysis Club of the Hungarian Academy of Sciences

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SCIENTIFIC PROGRAM AND TIME TABLE

MONDAY, October 4

8:00 - 10:00 Registration in the House of Hungarian Academy of Sciences

10:00 - 11:15 **Section 1**

Chairmen: Prof. János B.Nagy and Prof. Ferenc Nagy

10:00 - 10:15 **Welcome address and Symposium opening**
Prof. Pál Fejes, Prof. Alfred Frennet and Prof. László Guzzi

10:15 - 10:45 **Dubois, V., Adam, M., Bocca, P., Waels, B., Fayet, J-L. and Jannes, G.:**
CERIA-Institute MEURICE / Physical Chemistry and Catalysis, Brussels, Belgium

On the effect of active carbons on the hydrogenation of nitro-aliphatic compounds

10:45 - 11:15 **Pálinkó, I., Kiss, J.T. and Török, B.:**
Department of Organic Chemistry, József Attila University, Szeged, Hungary

Carbonaceous species in metal-catalyzed hydrogenation and isomerisation reactions.

Are they spectators or active participants?

11:15 - 11:30 Coffee Break

11:30 - 13:00 **Section 2**

Chairmen: Prof. Alfred Frennet and Prof. Pál Tétényi

11:30 - 12:00 **Csányi, L. J. and Jáky, K.:**
Institute of Inorganic and Analytical Chemistry, József Attila University, Szeged, Hungary

Some features of catalytic oxidation of hydrocarbons under phase-transfer conditions

12:00 - 12:30 **¹Vodnár, J., ²Fejes, P. and ²Varga, K.:**
¹Babes-Bolyai University, Faculty of Economic Sciences, Laboratory of Chemical Technology, Cluj-Napoca (Kolozsvár), Romania

²Applied Chemistry Department, József Attila University,
Szeged, Hungary

*Decomposition of organic hydroperoxides on cation exchangers
V.: Kinetic pathway of p-tert-butylcumene hydroperoxide decom-
position*

12:30 - 13:00 **¹Fontaine, M., ²Messere, R., ²Demonceau, A. and ²Noels, A.F.:**
¹Laboratory of Organic Synthesis and Catalysis
²Laboratory of Macromolecular Chemistry and Organic Cata-
lysis, Institute of Chemistry, University of Liege,
B-4000 Sart-Tilman, Belgium

*Co₂(CO)₈ vs. rhodium complexes as homogeneous catalysts in
coupling of aldehydes and related reactions*

13:00 - 14:30 Lunch

14:30 - 16:00 **Section 3**

Chairmen: Prof. Pál Fejes and Prof. Georges Jannes

14:30 - 15:00 **Szedlacsek, P.:**
Institute of Isotopes of the Hungarian Academy of Sciences,
Budapest, Hungary

*A novel analysis of adsorption and desorption by transient me-
thods*

15:00 - 15:30 **Fontaine, J-L., Germain, A. and Vanguetstaine, P.:**
Laboratory of Organic Synthesis and Catalysis, Institute of
Chemistry, University of Liege, B-4000 Sart-Tilman, Belgium

*Study of the transient phases of the hydrogen-oxygen catalytic
reaction*

15:30 - 16:00 **Raskó, J., Bontovics, J., Papp, E. and Solymosi, F.:**
Institute of Solid State and Radiochemistry of József Attila
University and Reaction Kinetics Research Group of the Hun-
garian Academy of Sciences, Szeged, Hungary

Adsorption and catalytic destruction of methyl chloride

16:00 - 16:15 Coffee Break

16:15 - 17:45

Section 4

Chairmen: Prof. Károly Varga and Prof. Marc Remy

16:15 - 16:45

¹Uszkurat, I., ¹Paál, Z., ²Soauabe, M. and ²Kappenstein, Ch.:
¹Institute of Isotopes of the Hungarian Academy of Sciences,
Budapest, Hungary
²Laboratory of Catalysis of the Organic Chemistry, University
of Poitiers, Poitiers Cedex, France

*Comparison of activity and selectivity of Pt-Sn/Al₂O₃ catalysts
using n-hexane as a probe*

16:45 - 17:15

Baukens, A., Malnero, C., Filie, L. and Jannes, G.:
CERIA-Institute Meurice / Physical Chemistry and Catalysis,
Brussels, Belgium

Carbonyl and olefin hydrogenation on platinum catalysts

17:15 - 17:45

Erdőhelyi, A., Cserényi, J. and Solymosi, F.:
Institute of Solid State and Radiochemistry of József Attila
University and Reaction Kinetics Research Group of the Hun-
garian Academy of Sciences, Szeged, Hungary

*Decomposition of CH₄ and reaction of CH₄ with CO₂ over sup-
ported Pd catalysts*

18:30 - 22:00

Welcome party
in the House of Hungarian Academy of Sciences

TUESDAY, October 5

8:30 - 9:50

Section 5

Chairmen: Prof. László Csányi and Prof. János Vodnár

8:30 - 8:55

Zhuang, Y. and Frennet, A.
Catalyse Hétérogène, Université Libre de Bruxelles,
B-1050 Bruxelles, Belgium

*Methylcyclopentane ring opening over EuroPt-1,
I. Hydrogen effect on reactivity and selectivity*

8:55 - 9:20

Zhuang, Y. and Frennet, A.
Catalyse Hétérogène, Université Libre de Bruxelles,

B-1050 Bruxelles, Belgium

*Methylcyclopentane ring opening over EuroPt-1,
II. Kinetic modelling*

9:20 - 9:50

Lu

¹Kele, Z., ¹Halász, J., ²Paál, Z. and ¹Fejes, P.:

¹Applied Chemistry Department, József Attila University, Szeged, Hungary

²Institute of Isotopes of the Hungarian Academy of Sciences, Budapest, Hungary

Transformation of methylcyclopentane over In-containing ZSM-5 zeolite catalysts

9:50 - 10:00

Coffee Break

10:00 - 12:30

Sight-seeing for the Belgian participants

10:30 - 12:30

Meeting of the Hungarian Catalysis Club

12:30 - 14:00

Lunch

14:00 - 15:30

Section 6

Chairmen: Prof. Jean-Luc Fontaine and Prof. Zoltán Paál

14:00 - 14:30

¹Rédey, Á., ²Hall, W.K. and ¹Kun-Szabó, T.:

¹Department of Chemical Engineering and Technology, University of Veszprém, Veszprém, Hungary

²Department of Chemistry, University of Pittsburgh, Pittsburgh, USA

Reactions of diolefins over molibdena-alumina

14:30 - 15:00

Ponthieu, E., Payen, E. and Grimblot, J.:

Laboratoire de Catalyse Hétérogène and Homogène, Université des Sciences et Technologies de Lille, F-59655 Villeneuve d'Ascq Cédex, France

Alumina supports made by sol-gel chemistry: influence of the solution chemistry

15:00 - 15:30

¹Tungler, A., ¹Tarnai, T., ¹Máthé, T., ¹Petró, J. and

²Sheldon, R.A.:

¹Department of Organic Chemical Technology, Technical University of Budapest, Budapest, Hungary

²Department of Organic Chemistry and Catalysis, Technical University, Delft, Hollandia

Asymmetric heterogeneous catalytic hydrogenations

15:30 - 15:45 Coffee Break

15:45 - 17:45 **Section 7**

Chairmen: Prof. János B.Nagy and Prof. József Petró

15:45 - 16:15

Pál-Borbély, G. and Beyer, H. K.:

Central Research Institute for Chemistry of the Hungarian Academy of Sciences, Budapest, Hungary

Synthesis and characterization of sheet silicates

16:15 - 16:45

Korányi, T. I., Garcia, C. L. and Lercher, J. A.:

Institut für Physikalische Chemie und Christian Doppler Labor, Technische Universität, Wien, Austria

Adsorption and surface reaction of thiophene on various zeolites

16:45 - 17:15

Valyon, J.:

Central Research Institute for Chemistry of the Hungarian Academy of Sciences, Budapest, Hungary

On the preparation and properties of CuY and Cu-ZSM-5 catalysts for NO decomposition

17:15 - 17:45

¹Hannus, I., ¹Kiricsi, I., ¹Tasi, Gy., ¹Fejes, P., ²Förster, H. and ³B.Nagy, J.:

¹Applied Chemistry Department, József Attila University, Szeged, Hungary

²Institute of Physical Chemistry, University of Hamburg, Hamburg, Germany

³Laboratoire de Catalyse, Facultes Universites, Notre-Dame de la Paix, Namur, Belgium

Thermal behaviour of sodium azide loaded faujasites as potential basic catalysts

19:00 -

Symposium banquet in the Restaurant *Aranyhal*

Wednesday, October 6

8:30 - 10:00

Section 8

Chairmen: Prof. Mihály Bartók and Prof. Vincent Dubois

8:30 - 9:00

¹Evanics, F., ¹Kiricsi, I., ¹Hannus, I., ¹Tasi, Gy., ²Förster, H. and ¹Fejes, P.:

¹Applied Chemistry Department, József Attila University, Szeged, Hungary

²Institute of Physical Chemistry, University of Hamburg, Hamburg, Germany

Study of neopentane adsorption on HNaY-FAU, HNaM-MOR and HZSM-5 types of zeolite catalysts

9:00 - 9:30

¹Ivanova, I.I., ²Brunel, D., ¹B.Nagy, J., ¹Daelen, G. and ¹Derouane, E.G.:

¹Facultés Universitaires Notre-Dame de la Paix, Laboratoire de Catalyse, B-5000 Namur, Belgium

²Ecole Nationale Supérieure de Chimie, Laboratoire de Chimie Organique Physique, F-34053 Montpellier, France

An in situ ¹³C-NMR study of the mechanism of cumene n-propylbenzene isomerization over H-ZSM-11

9:30 - 10:00

Onyestyák, Gy. and Kalló, D.

Central Research Institute for Chemistry of the Hungarian Academy of Sciences, Budapest, Hungary

FTIR spectroscopic study on interactions between hydrated Cd-zeolites and acetylene

10:00 - 10:15

Coffee Break

10:15 - 11:45

Section 9

Chairmen: Prof. Georges Jannes and Prof. Dénes Kalló

10:15 - 10:45

Török, B., Pálinkó, I., Molnár, Á. and Bartók, M.:

Department of Organic Chemistry, József Attila University, Szeged, Hungary

Transformation of propylcyclobutane over a Pt/SiO₂ catalyst

- 10:45 - 11:15 **Hua Zhu, Schay, Z. and Guzzi, L.:**
 Department of Surface Chemistry and Catalysis, Institute of
 Isotopes of the Hung. Academy of Sci., Budapest, Hungary
- Complete oxidation of xylene over an amorphous Pd₂Ni₅₀Nb₄₈
 alloy*
- 11:15 - 11:45 **Katona, T., Kapocsi, I., Molnár, Á. and Bartók, M.:**
 Department of Organic Chemistry, József Attila University,
 Szeged, Hungary
- Activity and selectivity of copper catalysts prepared from amor-
 phous Cu-Zr and Cu-Ti alloy precursors in the dehydrogenation
 of methanol to methyl formate*
- 11:45 - 12:00 Coffee Break
- 12:00 - 13:30 **Section 10**
- Chairmen: Prof. Alfred Frennet and Prof. Frigyes Solymosi
- 12:00 - 12:30 **Remy, M. and Poncelet, G.:**
 Université Catholique de Louvain, Unité de Catalyse et de
 Chimie des Matériaux Divisés, B-1348 Louvain-la-Neuve,
 Belgium
- Acidity of heterogeneous catalysts studied by X-ray photoelectron
 spectroscopy*
- 12:30 - 13:00 **Klivényi, G. and Solymosi, F.:**
 Institute of Solid State and Radiochemistry of József Attila
 University and Reaction Kinetics Research Group of the Hun-
 garian Academy of Sciences, Szeged, Hungary
- Generation and charecterization of CH₃ radical on Rh(111)*
- 13:00 - 13:30 **Lu, G. and Guzzi, L.**
 Department of Surface Chemistry and Catalysis, Institute of
 Isotopes of the Hungarian Academy of Sciences, Budapest,
 Hungary
- Structural and catalytic studies of NaY supported Pt-Co bime-
 tallic catalysts*
- 13:30 - 14:00 **General discussion and closing remarks**
- 14:00 - 15:00 Lunch

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