



Deutsche
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The Second International Symposium on Catalysis Science and Technology

The Sustainable Use of Resources and Environment Protection by Catalysis

17th – 18th March 2015

Ho Chi Minh City University of Technology, Vietnam

Organized by Ho Chi Minh city University of Technology,
268, Ly Thuong Kiet street, District 10, Ho Chi Minh city, Vietnam
and Vietnam Petroleum Institute
VPI Tower, 167 Trung Kinh, Yen Hoa, Cau Giay, Ha Noi
<http://www.pvpro.com.vn/vn/news/news-event.html/?catID=29>

Under the auspices of the German Research Foundation (DFG), Vietnam Petroleum Institute (VPI), Ho Chi Minh city University of Technology (HCMUT), Leibniz Institute for Catalysis (LIKAT) and Petrovietnam Research and Development Center For Petroleum Processing (PVPro). The organizing committee gratefully acknowledges the support of these organizations.

Scientific Committee and Local Organizing Committee

Scientific Committee

HO Si Thoang, Vietnam

LUU Cam Loc, Vietnam

BRÜCKER Angelika, Germany

MARTIN Andreas, Germany

NGUYEN Huu Luong, Vietnam

PHAN Dinh Tuan, Vietnam

Organizing Committee

Ho Chi Minh City, Vietnam

MAI Thanh Phong (Chair)

HOANG Dang-Lanh

NGUYEN Anh Duc

DANG Thanh Tung

PHAN Thanh Son Nam

NGUYEN Huu Luong

LE Thi Kim Phung

NGUYEN Tan-Trung (Secretariat)

Welcome to Ho Chi Minh,

We are delighted to welcome you to the second international symposium of catalysis science and technology in the dynamic city of Ho Chi Minh, in the South of Vietnam. We are very proud to welcome all participants from Vietnam, German and Thailand and very happy that many great scientists, professors, lecturers, PhD students, Master students will attend the meeting and will present their work.

This conference brings together the catalysis research communities to explore the latest advances in the basic and applied aspects of Catalysis Science and Technology into sustainable use of resources and environmental protection. In recent years, this area has been continuously fed by the amazing developments in heterogeneous catalysis, synthesis and characterization of new catalysts, nanoparticles, nanostructure materials, catalysis for energy, chemical and environmental protection and breakthrough techniques.

These themes and developments will be discussed during a 1.5-day program, which includes plenary lectures and 3 sessions of oral presentations. We are grateful to the members of the international scientific committee and organizing committee for their active participation in the preparation of the scientific program.

We gratefully acknowledge many generous institutional sponsors as German Research Foundation (DFG), Vietnam Petroleum Institute (VPI), Ho Chi Minh city University of Technology (HCMUT), Leibniz Institute for Catalysis (LIKAT) and Petrovietnam Research and Development Center For Petroleum Processing (PVPro), which made this symposium possible and allowed to offer great conditions.

We hope that, as the previous successful symposium in Ha Noi, the second one in Ho Chi Minh will provide a stimulating scientific environment and a relaxed atmosphere that will catalyse exchanges, new ideas and collaborations.

We wish you an enjoyable symposium and an extremely pleasant stay in Ho Chi Minh city, Vietnam.

On behalf of the organizing committee,

MAI Thanh Phong

Program

Second International Symposium on Catalysis Science and Technology
17th – 18th March 2015, Ho Chi Minh city, Vietnam

Tuesday Morning, 17th March 2015

A4 Hall

Opening Symposium

Chairs: Pro. Dr. Habil. LUU Cam Loc and and PD Dr. Habil. KONDRATENKO Evgenie

07h30	Welcome and Registration
	Opening Ceremony
08h00	Introduction of Participants & Overview of the Symposium MC: NGUYEN Tan-Trung
08h10	Welcome Speech Assoc. Prof. Dr. MAI Thanh Phong - Vice Rector – HCMUT, Vietnam
08h15	LIKAT Speech Prof. Dr. BRÜCKNER Angelika – Member of Director Board - LIKAT, Germany
08h20	Speech of Ruhr-Universität Bochum Prof. Dr. GRÜNERT Wolfgang, Ruhr-Universität Bochum, Germany
08h25	VPI Speech Dr. NGUYEN Anh Duc – Vice Director – VPI, Vietnam
08h30	Speech of Universität Clausthal Prof. Dr. KAUFMANN Dieter, Universität Clausthal, Germany
08h35	Speech of Universität Rostock Prof. Dr. LANGER Peter, Universität Rostock, Institute for Chemistry, Organic Chemistry, Germany
08h40	Plenary Lecture 1 Carbon dioxide hydrogenation towards synthetic natural gas – a route to effective future energy storage PD. Dr. Habil. MARTIN Andreas, LIKAT, Germany
09h15	Plenary Lecture 2 Petrochemicals from high CO ₂ content natural gas resources in Vietnam: initial results and further works at PVPro – VPI Dr. NGUYEN Anh Duc, PVPro - VPI, Vietnam
09h50	Coffee/Tea Break
10h20	Plenary Lecture 3 Selective catalytic reduction of NO by NH ₃ – new developments in the knowledge of catalysts and reaction mechanisms Prof. Dr. GRÜNERT Wolfgang, Ruhr-Universität Bochum, Germany
10h55	Plenary Lecture 4 Transition-metal-catalyzed C-H functionalization: heterogeneous system development and applications in pharmaceutical synthesis Dr. TRUONG Vu Thanh, HCMUT, Vietnam
11h30	Plenary Lecture 5 Spectroscopic in situ and operando techniques: essential tools for analyzing structure-function relationships in catalysis Prof. Dr. BRÜCKNER Angelika, LIKAT, Germany
12h05	Lunch

Tuesday Afternoon, 17th March 2015

Room 506 - A4 Building

Session 1A: Catalyst for Energy and Chemicals

Chairs: Dr. NGUYEN Huu Luong and Prof. Dr. Habil. MARTIN Andreas

- 14h00 **Presentation 1**
Synthesis of Cu/ZnO-ZrO₂-Al₂O₃ catalyst and silica fiber coated by ZSM-5 for LPG synthesis
Ms. RATANATHAVORN Wittawat, Chulalongkorn University, Thailand
- 14h30 **Presentation 2**
Green chemistry based on environmentally benign catalytic reactions and regenerative chemistry
Prof. Dr. LANGER Peter, Universität Rostock, Institute for Chemistry, Organic Chemistry, Germany
- 15h00 **Presentation 3**
Preparation, characterization of meso-structured silica-calcia mixed oxide (MSCMO) and application for converting Vietnamese rubber seed oil to biodiesel
Assoc. Prof. Dr. NGUYEN Khanh Dieu Hong, HUT, Vietnam
- 15h30 **Coffee/Tea Break**
- 16h00 **Presentation 4**
Fatty ester-based carbonates and hydroxycarbamates
Dr. KÖCKRIZT Angelika, LIKAT, Germany
- 16h30 **Presentation 5**
n-Hexane hydro-isomerization over promoted Pd/HZSM-5 catalysts
Ms. DAO Thi Kim Thoa, HCMUT, Vietnam
- 17h00 **Presentation 6**
Organocatalyzed synthesis of fine chemicals utilizing CO₂ as a sustainable C1 building block
Dr. WERNER Thomas, LIKAT, Germany
- 17h30 **Closing remark**
- 18h30 **Symposium Dinner**

Tuesday Afternoon, 17th March 2015

A4 Hall

Session 2: Advanced Techniques for Catalysis Research and Development

Chairs: Prof. Dr. PHAN Thanh Son Nam and Prof. Dr. BRÜCKER Angelika

- 14h00 **Presentation 1**
Ni K-EDGE EXAFS and in situ Ni K-EDGE XANES characterizations of Mg-Al-Ni hydrotalcite like compound for explaining its acid properties.
Assoc. Prof. Dr. NGUYEN Khanh Dieu Hong, HUT, Vietnam
- 14h30 **Presentation 2**
Insights into the mechanism of photocatalytic water reduction.
Prof. Dr. LUDWIG Ralf, University of Rostock, Institute for Chemistry, Physical and Theoretical Chemistry, Germany
- 15h00 **Presentation 3**
Catalytic hydrogenation reactions of CO₂: Gaining mechanistic insights by in situ infrared spectroscopy
Dr. BENTRUP Ursula, LIKAT, Germany
- 15h30 **Coffee/Tea Break**
- 16h00 **Presentation 4**
Preparation and photocatalytic activity of g-C₃N₄/Ta₂O₅ composite
Assoc. Prof. Dr. VO Vien, Quy Nhon University, Vietnam
- 16h30 **Presentation 5**
Synchrotron radiation as tool for catalyst characterization
Dr. RADNIK Jörg, LIKAT, Germany

17h00 **Presentation 6**
Study of new catalyst CuO-ZnO-CeO₂ and CuO-ZnO-CeO₂-Al₂O₃ for CO₂ conversion to
methanol at low pressure
Dr. LE Phuc Nguyen, PVPro, Vietnam

17h30 **Closing remark**

18h30 **Symposium Dinner**

Wednesday morning, 18th March 2015

Room 506 - A4 Building

Session 1B: Catalyst for Energy and Chemicals

Chairs: Prof. Dr. Habil. LUU Cam Loc and Prof. Dr. LUDWIG Ralf

- 08h00 **Presentation 1**
Synthesis of cobalt supported on silica fibers modified with ZSM-5 for Fischer-Tropsch synthesis
Dr. KLAIGAEW Kanthana, Department of Chemical Technology, Faculty of Science, Chulalongkorn University, Thailand
- 08h30 **Presentation 2**
Catalytic conversion of CO₂ into sustainable chemicals and fuels
PD Dr. Habil. KONDRATENKO Evgenie, LIKAT, Germany
- 09h00 **Presentation 3**
Enhanced production of C₂-C₄ olefins by catalytic cracking of triglyceride-rich biomass over nano-ZSM-5/SBA-15 analog composites
Dr. VU Xuan Hoan, VPI, Vietnam
- 09h30 **Coffee/Tea Break**
- 10h00 **Presentation 4**
Energy and chemical feedstocks by thermochemical/catalytic conversion of biomass
Dr. MEIER Dietrich, Thünen-Institut für Holzforschung, Germany
- 10h30 **Presentation 5**
Cu-based organic frameworks as heterogeneous catalysts for C-C and C-N coupling reactions
Ms. DANG Huynh Giao, HCMUT, Vietnam
- 11h00 **Presentation 6**
Photocatalytic generation of chemical energy carriers from light, water and CO₂
Dr. JUNGE Henrik, LIKAT, Germany
- 11h30 **Closing remark and Lunch**

Wednesday morning, 18th March 2015

A4 Hall

Session 3: Catalysis for Environmental Protection

Chairs: Dr. NGUYEN Anh Duc and Prof. Dr. GRÜNERT Wolfgang

- 08h00 **Presentation 1**
Using ionic liquid catalysts for conversion of waste polyethylene terephthalate and soybean oil to polyester polyol
Assoc. Prof. Dr. BUI LE Thi Thuy, Hanoi University of Mining and Geology, Vietnam
- 08h30 **Presentation 2**
Wood and Organic Chemistry - a Promising Partnership
Prof. Dr. KAUFMANN Dieter, TU Clausthal, Germany
- 09h00 **Presentation 3.**
Production of value added chemicals via photocatalytic conversion of sugar using TiO₂ fabricated by modified techniques
Ms. PAYORMHORM Jiraporn, Joint Graduate School of Energy and Environment, King Mongkut's University of Technology Thonburi, Thailand
- 09h30 **Coffee/Tea Break**
- 10h00 **Presentation 4**
Selective catalytic reduction of NO_x of ship diesel engine exhaust gas with C₃H₆ over Cu/Y zeolite
Dr. ARMBRUSTER Udo, LIKAT, Germany
- 10h30 **Presentation 5**
Kinetics of deep oxidation of CO, p-xylene and their mixture on Pt-CuO catalysts
Dr. NGUYEN Tri, Institute of Chemical Technology - Vietnam Academy of Science and Technology, Vietnam
- 11h00 **Presentation 6**
Inorganic materials for gas cleaning processes
Dr. WOHLRAB Sebastian, LIKAT, Germany
- 11h30 **Closing remark and Lunch**