UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD
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UMICORE AG & CO. KG,

Petitioner

Patent No. 7,601,662
Issue Date: October 13, 2009
Title: COPPER CHA ZEOLITE CATALYSTS
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DECLARATION OF JOHANNES A. LERCHER, PH.D.

Case No. IPR2015-01121
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<h1>Table of Contents</h1>

I, Johannes A. Lercher, Ph.D, declare as follows:

I. BACKGROUND AND QUALIFICATIONS

1. I am currently a Professor in the Department of Chemistry at the Technische Universität München, located in Munich, Germany.

2. I studied chemistry at the Vienna University of Technology from 1972-1978, and engaged in graduate work in chemistry at the same university from 1978-1980. I received a doctorate degree in chemistry from the Vienna University of Technology in 1981. My thesis was entitled "Acid Sites on Al_2O_3/MgO and Al_2O_3/SiO_2 Mixed Metal Oxides." In 1985, I obtained the habilitation (venia docendi) in physical chemistry.

3. Starting during my academic studies and continuing until 1993, I was a lecturer and an Associate Professor in Chemistry at the Vienna University of Technology.

4. From 1993 to 1998, I was a full Professor for Catalytic Materials and Processes at the Department of Chemical Technology of the University Twente, the Netherlands

5. I have been a Professor at the Technische Universität München since 1998.

6. My research lies in the areas of fundamental and applied aspects of oxide and molecular sieve based sorption and catalysis, the design of complex multifunctional catalysts, in situ characterization of catalytic processes and developing

new routes to activate, convert and functionalize hydrocarbons in petroleum and petrochemical processes.

7.   Over the course of my career, I have taught classes entitled "Industrial Catalytic Reactions and Reaction Mechanisms," "Heterogeneous Catalysis I: Theory and Model Reactions," "Heterogeneous Catalysis II: Application in Industrial Processes and Environmental Protection," "Physical Chemistry," "Thermodynamics of Phases," "Kinetics and Catalysis," "Industrial Catalysis," "Environmental Catalysis," "Reaction Technology and Catalysis," "Industrial Processes I – Energy," "Industrial Processes II – Chemical Synthesis," and "Chemically Functional Materials."

8.   In addition to my professorial positions, I have also had other university titles and have been part of several professional organizations.

9.   In particular, I was the Chairman of the Department of Chemistry at the Technische Universität München from 2000 to 2003, was the President of the International Zeolite Association from 2001 to 2004, and am currently President of the Federation of European Catalysis Societies.

10.   My research activity has been published in over 480 scientific papers in international journals. A listing of my publications is included in my curriculum vitae.

11.   I am currently the Editor-in-Chief of the Journal of Catalysis, and am a member of the board of several other catalysis journals. Further, I am on the editorial board of the book series, Catalysis Book Series: Theory and Applications (Royal

Society of Chemistry).

12.   A copy of my curriculum vitae, which provides further details regarding my academic background, professional experience, publications, teaching experience, awards I have received, and organization memberships, is attached as Exhibit A.

II.   ASSIGNMENT AND MATERIALS REVIEWED

13.   I submit this declaration in support of Umicore AG & Co. KG's ("Umicore's") Petition for Inter Partes Review of U.S. Patent No. 7,601,662 ("the '662 patent"), Case No. IPR2015-01121.

14.   I am not an employee of Umicore or any affiliate or subsidiary thereof.

15.   I am being compensated for my time at a rate of 400 euros per hour. My compensation is in no way dependent upon the substance of the opinions I offer below, or upon the outcome of Umicore's petition for inter partes review (or the outcome of such an inter partes review, if a trial is initiated).

16.   I have been asked to provide certain opinions relating to the patentability of the claims of the '662 patent. Specifically, I have been asked to provide my opinion regarding (i) the level of ordinary skill in the art to which the '662 patent pertains and (ii) the patentability of claims 1-24, 30, and 32-50.

17.   The opinions expressed in this declaration are not exhaustive of my opinions on the patentability of claims 1-24, 30, and 32-50. Therefore, the fact that I do not address a particular point should not be understood to indicate any agreement on my part that any claim otherwise complies with the patentability requirements.

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