UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

E. I. du Pont de Nemours and Company and
Archer-Daniels-Midland Company

Petitioners

v.

FURANIX TECHNOLOGIES B.V. .

Patent Owner

U.S. Patent No. 8,865,921
Issue Date: October 21, 2014

Entitled: METHOD FOR THE PREPARATION OF 2, 5-
FURANDICARBOXYLIC ACID AND FOR THE PREPARATION OF
THE DIALKYL ESTER OF 2, 5-FURANDICARBOXYLIC ACID

Inter Partes Review No.: Unassigned

Declaration of Dr. Kevin J. Martin

I, Kevin J. Martin, do hereby declare as follows:

1.   I am a citizen of the United States, residing at 130 Kensington Court, Mount Zion, Illinois.

2.   I received a Bachelor of Science degree in chemistry from the University of North Carolina at Charlotte in 1980 and a doctorate in inorganic chemistry from Michigan State University in 1986.

3.   I have been employed at Archer Daniels Midland ("ADM") as a Senior Scientist from March 2007 until 2011, and as the Manager of Catalyst Research focusing on catalyst and process research from high-throughput screening through scale-up and commercialization from 2011 to present.

4.   Prior to joining ADM, I was a Senior R&D Chemist with Nepera Chemicals, aka Rutherford Chemicals, from December 1995 to December 2005, specializing in catalytic process development, heterogeneous catalysis synthesis, hydrogenation and oxidation of pyridine derivatives, pilot plant operations, and quality control.

5.   Prior to joining Nepera, I was a Project Chemist with Texaco from 1988 until 1995 focusing on processing of light hydrocarbons, alkylation of organic compounds, and catalyst characterization.

6. I have extensive expertise and experience with respect to selective hydrogenation and oxidation of organic compounds, and reactors and processes therefor, e.g., trickle bed, fixed-bed and fluid bed reactors, continuous and batch processes, materials synthesis and characterization.

7. I have extensive expertise and experience with respect to catalyst testing in laboratories and pilot plants, high-throughput catalyst prep and activity screening, catalyst and process optimization, and bio-based and renewable chemicals and fuels.

8. I have authored or co-authored several articles in the field of Chemistry and Catalysis as identified in my resume attached hereto as Exhibit 1015.

9. I am a co-inventor on approximately 9 patents and patent applications, as identified in my resume attached hereto as Exhibit 1015.

10. This declaration provides factual information and my opinions regarding, *inter alia*:

- The catalytic oxidation of heterocyclic aromatic compounds, specifically furans, in the presence of Co/Mn catalysts, including the underlying reaction temperature and pressure conditions and effect on yield.

- The specification and claims of Furanix U.S. Patent Number 8,865,921 (Exh. 1001).

- The specification and claims of DuPont International Published Application WO 2001/072732 (Exh. 1002).

- Partenheimer et al., "Synthesis of 2, 5-Diformylfuran and Furan-2, 5-Dicarboxylic Acid by Catalytic Air-Oxidation of 5-Hydroxymethylfurfural. Unexpectedly Selective Aerobic Oxidation of Benzyl Alcohol to Benzaldehyde with Metal/Bromide Catalysts," ("Partenheimer") (Exh. 1003).

- ADM U.S. Patent No. 8,558,018 (Exh. 1004).

- Lewkowski, Synthesis, chemistry and applications of 5-hydroxymethylfurfural and its derivatives., ARKIVOC 2001 (i) 17-54, Department of Organic Chemistry, University of Łódź, Narutowicza 68, 90-136 Łódź, POLAND (Exh. 1005);

- USSR RU-448177A1 (Exh. 1007) (w/Certified English Language Translation) (citations to Certified English Language Translation).

11.   I am not a lawyer and have no special training in patent law. To the

extent that I rely upon legal standards for the purposes of this

declaration, I do so based on information from counsel. I have been

informed by counsel that in this proceeding, the claims must be given

their broadest reasonable interpretation consistent with the specification

by one of ordinary skill in the art. I have been informed by counsel that

independent claims are read separately to determine their scope.

Dependent claims include the limitations of the claim from which they

depend (e.g., another independent or dependent claim). To determine the

scope of a dependent claim, it must be read together with the claim or

claims upon which it depends.

12.   I have been informed by counsel that anticipation requires a single prior art

reference that discloses each and every element of a claimed invention.

13.   I have been informed by counsel that obviousness or a claim being rendered

obvious, requires the following: "as a whole [, the claimed subject matter,]

would have been obvious at the time the invention was made to a person

having ordinary skill in the art" taking into consideration (a) the scope

and content of the prior art; (b) the differences between the prior art and

the claims under consideration; (c) the level of ordinary skill in the

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