

UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE PATENT TRIAL AND APPEAL BOARD

**DECLARATION OF DR. JAMES A. RITTER IN SUPPORT OF PATENT  
OWNER PRELIMINARY RESPONSE**

Mail Stop PATENT BOARD  
Patent Trial and Appeal Board  
U.S. Patent & Trademark Office  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

## Table of Contents

I.	Qualifications.....	1
II.	Person of Ordinary Skill in the Art.....	5
III.	Petitioner’s Asserted Prior Art .....	6
	A.    U.S. Patent No. 6,896,852 to Meiller.....	7
	B.    Japanese Patent Application Publication No. H10-37812 to Abe .....	8
	C.    U.S. Patent No. 5,914,294 to Park .....	10
	1.    Park’s Honeycombs Do Not Necessarily Have An IAC Less Than 35 g/L.....	10
	2.    Petitioner’s Hypothetical Honeycomb Based on Park’s Formulation D Contradicts Park’s Disclosure.....	15
	3.    It Is Impossible to Deduce the IAC of Petitioner’s Hypothetical Honeycomb .....	25
IV.	Conclusion.....	28

I, James A. Ritter, make this declaration based on my personal knowledge and in support of Patent Owner's Preliminary Response to BASF's Petition for Inter Partes Review. If sworn as a witness, I could and would testify to the matters referred to below.

## **I. Qualifications**

1. I am the L. M. Weisiger Professor of Engineering and a Carolina Distinguished Professor in the Department of Chemical Engineering at the University of South Carolina. A copy of my resume is attached as Appendix A to this declaration.

2. I received my associates degree in mathematics and science at Onondaga Community College in Syracuse, New York in 1980. I earned bachelor's and master's degrees in chemical engineering from the State University of New York at Buffalo in 1983 and 1985, respectively. The State University of New York at Buffalo awarded me a Ph.D. degree in chemical engineering in 1989.

3. After completing my education, I worked as a senior engineer at the Westinghouse Savannah River Company, Savannah River Technology Center, in Aiken, South Carolina from 1989 to 1993.

4. In 1993, I joined the faculty of the University of South Carolina, Department of Chemical Engineering, as an assistant professor. I became a tenured associate professor in 1999 and a full professor in 2003. Today, I am the

L.M. Weisiger Professor of Engineering and a Carolina Distinguished Professor. My research at the University focuses on the physio-chemical phenomena of adsorption, including adsorption processes for gas separation and purification, nanoporous adsorbents for adsorptive separation and purification, and the measurement of diffusion rates in nanoporous adsorbents. Under my direction, my laboratory at the University has collaborated with numerous industry partners in researching adsorbents and their commercial uses. Past and current research partners include, for example, MeadWestvaco (which is the predecessor of Ingevity), BASF Corporation, Exxon Research and Engineering Company, BP-Amoco Chemical Company, Shell, NASA, the Department of Energy, and the Idaho National Engineering and Environmental Laboratory, to name a few.

5. I am a member of the prestigious American Association for the Advancement of Science and a fellow of the leading professional organizations for chemists and chemical engineers, the American Chemical Society and American Institute of Chemical Engineers, respectively.

6. I am a named inventor on four patents and author of nine copyrighted works.

7. I have published and contributed to hundreds of technical papers, books and book chapters, conference proceedings, and other publications in my

field. These include publications concerning adsorption of volatile organic compounds on activated carbon adsorbents, such as:

C. E. Holland, S. A. Al-Muhtaseb, and J. A. Ritter, "Adsorption of C1 to C7 Normal Alkanes on BAX Activated Carbon: 1. Potential Theory Correlation and Adsorbent Characterization," *Ind. Eng. Chem. Res.*, 40, 338-346 (2001); and

S. A. Al-Muhtaseb, C. E. Holland and J. A. Ritter, "Adsorption of C1 to C7 Normal Alkanes on BAX Activated Carbon: 2. Statistically-Optimized Approach for Deriving Thermodynamic Properties from the Adsorption Isotherm", *Ind. Eng. Chem. Res.*, 40, 319-337 (2001).

8. I have also authored publications concerning the adsorption of butane, including on activated carbon adsorbents, such as:

S. A. Al-Muhtaseb and J. A. Ritter, "New Methodology for the Measurement and Analysis of Adsorption Dynamics: Butane on Activated Carbon," *Ind. Eng. Chem. Res.*, 43, 7075-7082 (2004);

Y. Liu, C. E. Holland and J. A. Ritter, "Pressure Swing Adsorption-Solvent Vapor Recovery-III: Comparison of Simulation with Experiment for the Butane-Activated Carbon System," *Sep. Sci. Tech.*, 34, 1545-1576 (1999);

Butane Vapor Recovery by Pressure Swing Adsorption, AIChE Annual Meeting, Los Angeles, CA, November 1997, contributed;

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.