IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

THE DOW CHEMICAL COMPANY, Plaintiff,	)	
v.	)	C.A. No. 05-737 (JJF)
NOVA CHEMICALS CORPORATION (CANADA) and NOVA CHEMICALS INC. (DELAWARE), Defendants.	)	

DECLARATION OF SHIH-YAW LAI

I, Shih-Yaw Lai, do declare and state as follows:

Educational Background

1. I am currently employed by The Dow Chemical Company as a Senior Scientist, Basic Performance Plastics R&D, Asia and Pacific and I am stationed in Shanghai China.

2. I received a Ph.D. from the University of Michigan in 1986 in the area of macromolecular science and engineering. Prior to that I received a Masters Degree in Chemical Engineering from University of Cincinnati in 1980 and B.S. in Chemical Engineering from Tatung Institute of Technology (Taiwan) in 1975.

3. I have been working at Dow continuously since obtaining my Ph.D. in 1986.

4. I am one of the named inventors on the two patents-in-suit, U.S. Patents No. 5,847,053 and 6,111,023. In developing the work I did that's disclosed in these patents, I worked with co-inventors who had different and sometimes overlapping areas of expertise with me.

5. I developed the hypothesis that the slope of strain hardening can be used to characterize some of the key features of the new polymers described in the patents-in-suit. Of all of the co-inventors on our team, I was the expert in the material science of semicrystalline polymers. Material scientists look at the slope of strain hardening of materials, such as polyethylene polymers, under large deformation. I discussed my understandings of these concepts with my co-inventors.

6. I was familiar with the state of the art of knowledge regarding the tensile properties of polyethylene polymers in 1993. I knew how persons of ordinary skill in the art determined the slope of strain hardening at that time. Specifically, they would identify the region of the curve after the yield point that had the highest slope. The reason for this is that strain hardening is easiest to see at the end of the curve, before any end effects such as slippage or rupture. Thus, a person skilled in the art knew that when a tensile curve has an increasing slope after the yield point, the slope of strain hardening would be considered the slope at the end of the curve, before end effects. At that point, the slope is at its highest. All of this was well known to persons of ordinary skill in the material science of polyethylene polymers in 1993.

7. There are, as with any test, things that can go wrong with tensile testing that must be taken into account when analyzing tensile curves in determining the slope of strain hardening. One such situation is, as mentioned above, when the sample slips in the sample holder at the very end of the test, just before the sample breaks. When this occurs, the slope of the tensile curve suddenly decreases at the end of the curve. That decrease is not due to strain hardening and does not provide information on the strain hardening behavior of the polymer. It would be incorrect to use that part of the curve to measure

the slope of strain hardening. Therefore, if a tensile curve I was examining showed this sudden decrease in slope at the end of the curve, I would conclude that this decrease was due to the sample slipping the in the sample holder, and I would use the maximum slope of the curve just prior to this sudden decrease in slope.

8. There are other things that can occur in a tensile test that can affect the shape of the tensile curve. As a material scientist, I was able to address most of them and determine which parts of the curve could be used to determine the strain hardening behavior of the polymer and which parts of the curve showed artefacts of testing. Of course, as with any testing, there are some situations where the testing must be redone if the test results have unexplainable features. However, most tensile curves I have seen for polyethylene appeared as one of the types of curves described above.

I declare under penalty of perjury that the foregoing is true and correct.

8-28-2008
Date Chengdu China

Shih-Yaw Lai

CERTIFICATE OF SERVICE

I, Rodger D. Smith II, hereby certify that on August 27, 2008, I electronically filed the foregoing with the Clerk of the Court using CM/ECF, which will send notification of such filing(s) to the following:

Richard L. Horwitz
rhorwitz@potteranderson.com

I also certify that copies were caused to be served on August 27, 2008, upon the following in the manner indicated:

BY EMAIL

Richard L. Horwitz
Potter Anderson & Corroon, LLP
1313 N. Market Street, 6th Floor
Wilmington, DE 19899

BY EMAIL

Jeffrey W. Abraham
Finnegan, Henderson, Farabow
Garrett & Dunner, LLP
901 New York Avenue, N.W.
Washington, DC 20001
jeffrey.abraham@finnegan.com

/s/ Rodger D. Smith II
Rodger D. Smith II (#3778)