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PETER D. TROBOFF

(b)(6)

May 23, 2009

National Medal of Technology and Innovation  
Nomination Evaluation Committee  
c/o The United States Patent and Trademark Office  
Attention: Jennifer Lo, Program Manager

Re: Nomination of Dr. Zalman M. Shapiro

Dear NMTI Committee Members:

I write to support with this letter of recommendation the nomination of Dr. Zalman M. Shapiro for the National Medal of Technology and Innovation.

I have known Dr. Shapiro for over 30 years since the fall of 1977 when our family purchased a vacation home adjacent to his family on Deep Creek Lake in Western Maryland. Over these years, we became friends and spent many hours together talking about his professional activities and my own. We were in each other's homes not only at Deep Creek but we have also visited the Shapiros in Pittsburgh. I expect, however, that we spoke most often on Dr. Shapiro's small sailboat where he taught me to sail and we spoke about our respective careers and thoughts about many subjects professional and personal.

Further, despite my choice of the legal profession, I had taken at Columbia College many science courses in preparation for studies in medicine. I have practiced law for 40 years as a partner at Covington & Burling LLP in Washington, principally on international matters that have included hundreds of matters concerning U.S. controls on the exports of high-technology products and technical data. This work has drawn extensively on my interest in science because these assignments have focused on the export-control regimes of the Departments of State, Commerce, Energy and Treasury. Under these regulatory regimes, the applicability and level of controls for export purposes (including disclosure in this country to non-U.S. citizens or permanent residents) depends on how the products or technical data are classified on detailed lists of specifications developed by each

Department (e.g., the Munitions List of the State Department and the Commodity Control List of the Commerce Department). Such classification requires considerable understanding of the detailed specifications of the products and technical data of our clients. I have spent thousands of hours with client scientists and engineers in deliberations over classification of a wide range of products including materials deposition in which Dr. Shapiro holds leading patents, machine tools, carbon-carbon composites (including analysis of some of the first issues raised by this technology), encryption and, most recently, energy, light and other applications of nanoscience to new products. Further, my practice has always involved a number of leading American and overseas multinational companies who are highly dependent on their export trade and whether export licenses are required to supply non-U.S. customers.

In short, while certainly I do not have the formidable technical background and experience in science that Dr. Shapiro possesses, I fully appreciate his contributions to his field and have worked with many who have well-recognized credentials and technical skills in that field. I am familiar with his available publications and the awards that he has received over the years.

I am pleased to support enthusiastically Dr. Shapiro's nomination for the National Medal of Technology and Innovation because of his unique and extraordinarily valuable contributions. While the importance of his inventions is well documented, I want to emphasize the remarkable innovation and creativity that they represent and also their importance to our national security and economic well being. His work on an iodide vapor deposition process for zirconium and hafnium occurred shortly after World War II when development of the U.S. nuclear navy constituted a pillar of the U.S. policy of deterrence and containment of the former Soviet Union. As the Nation turns again to increased use of nuclear energy, his work on nuclear fuels, particularly on the properties and manufacture of  $UO_2$  continues to afford benefits to the American people. Finally, Dr. Shapiro's work on mixtures of uranium/plutonium fuels for power reactors offers the prospect for addressing in a constructive fashion the concern over potential diversion to military applications of fuel for civil energy uses.

It is equally important to emphasize the remarkable breadth of Dr. Shapiro's innovations. From food preservation and medical supply sterilization to diamond synthesizing, from cardiac pacemakers to power supplies, he has conceived of new innovations whose benefit to Americans and, indeed, people everywhere, has already been tangible but whose promise in the future may be even greater. In addition, these inventions of Dr. Shapiro, when viewed together,

demonstrate that his entire career exemplifies the kind of inquiring mind and inventive -- indeed, restless -- spirit that the National Medal seeks to recognize.

In view of the foregoing contributions of Dr. Shapiro, I am pleased to endorse Dr. Shapiro's receipt of the National Medal of Technology and Innovation and would, of course, be pleased to furnish any additional information that your Committee may require. Granting the National Medal to Dr. Shapiro would be in the finest traditions of this country and your Committee by recognizing a worthy and admirable contributor to scientific innovation that enhances the lives of our citizens and inspires younger researchers to follow a life of similar accomplishment.

Sincerely yours,



Peter D. Trooboff