

To: Patrick J. Wolfe, Provost and Executive Vice President for Academic Affairs and Diversity

From: Arvind Raman, John A. Edwardson Dean of the College of Engineering *Arvind Raman*

Date: June 20, 2023

Subject: **Recommendation to name Carol Handwerker the Reinhardt Schuhmann, Jr. Distinguished Professor in the School of Materials Engineering**

Dr. Carol Handwerker is a highly accomplished and respected materials engineer with extensive expertise in the field of electronics and solder alloys. She has made significant contributions to the understanding of Sn whiskering behavior and the solidification of Pb-free solder alloys, addressing critical issues in the electronics industry. Her groundbreaking work on Sn whiskers led to the production of the world's first Pb-free electronics by Matsushita/Panasonic, revolutionizing the industry and enabling more environmentally benign manufacturing and disposal of electronic devices worldwide.

Dr. Handwerker's leadership in the Lead-Free Solder Project and subsequent findings of the NEMI Alloy Selection Task Group resulted in the adoption of the Sn-Ag-Cu alloy system as the new international standard. Her continued collaboration with INEMI (International Electronics Manufacturing Initiative) has furthered the advancement of Pb-free solders, with more than 50 member companies and several universities issuing regular roadmaps on electronic systems.

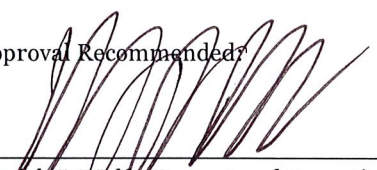
In addition to her remarkable research achievements, Dr. Handwerker is actively involved in advancing the adoption of Pb-free solders in defense and aerospace systems. She has collaborated with the Department of Defense (DoD) partners and is leading a major \$42 million, five-year DoD program focused on electronics reliability. Her research addresses the challenges posed by the global supply chain and ensures the quality of electrical components in critical defense systems.

Dr. Handwerker's influence extends beyond her research endeavors. She has provided visibility for Purdue University on national and international stages, serving on the U.S. Department of Commerce Industrial Advisory Committee and advising on issues related to the Chips for America Act. As a trailblazer within her profession, she has received prestigious awards, including the American Ceramic Society's Fulrath Award, TMS Research to Industrial Practice Award, and TMS Bardeen Award, among others. Her dedication to mentoring students and her leadership in large grants tied to workforce development showcase her commitment to education and training.

The MSEPC voted 13 – 1 in support of Dr. Handwerker's nomination for a distinguished professorship. No comment was left explaining the rationale for the "no" vote. The Ad hoc committee enthusiastically voted 5 – 0 in support of Professor Handwerker's Recommendation for Distinguished Professorship.

Overall, Dr. Carol Handwerker's exceptional research, leadership, and impact on the electronics industry make her an ideal candidate for the Reinhardt Schuhmann, Jr., Distinguished Professor position in the School of Materials Engineering. Her expertise in interconnect technologies, sustainability, and R&D-to-manufacturing transition aligns perfectly with the department's focus, and her proven track record of accomplishments and contributions would greatly enhance the academic and research endeavors of the institution.

Approval Recommended:

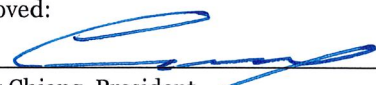


Patrick J. Wolfe, Provost and Executive Vice President
For Academic Affairs and Diversity

7/18/23

Date

Approved:



Mung Chiang, President
Roscoe H George Distinguished Professor of
Electrical and Computer Engineering

7.18.2023

Date

Cc
Luna Lu
Brittany Vestal
Milind Kulkarni
Amanda Van Meter