AFFIDAVIT OF TANIA M. SLAWECKI, PH.D.

I, Tania M. Slawecki, being duly sworn, of sound mind, and over the age of 18 years, declare the following:

1. I am a resident of the state of Pennsylvania. I live at 244 Mary Street, Lemont, PA 16851.

2. I am a Research Associate at the Materials Research Institute at the Pennsylvania State University (Penn State), University Park, PA campus, a position I have held for 15 years. (My CV is attached.)

3. In my present capacity and for the past eight years, I have worked in the Microwave Processing and Engineering Center and use microwaves to fabricate or process materials for industrial, commercial, and military applications.

4. I understand how microwaves interact with matter. Our bodies are made out of matter. Microwaves are absorbed by and do damage to the matter in our bodies.

5. The FCC regulations for microwave radiation from simple devices such as cell phones only cover thermal (heating) effects, not the more insidious “athermal” effects which do not involve heating but, rather, changes in electrical or charge states. Such changes can have dire repercussions in living tissue over time.

6. The FCC regulations on which device manufacturers are relying for safety assurance (a) are out of date with present scientific understanding of how microwave radiation causes damage to the body, (b) do not take into consideration constant daily exposure from multiple sources as presently exists today, and (c) have resisted being changed due to conflicts of interest as it is staffed by individuals from the telecommunications industry whose profit motive has trumped public health and safety.

7. I have been harmed personally (hearing loss, tinnitus, pain) from chronic exposure to a WiFi transmitter on the ceiling of my university office which emitted (near my head) at power levels 10,000 times lower than the FCC “safety” standard.

8. I am aware of harm to others and have documented harm to one other person so far. I have learned that real harm can and is being done to all of us by the low-level microwave radiation from wireless devices whether or not we recognize the cause of our symptoms.

9. I have scrutinized and concur with the voluminous data in the science literature that reveals biological harm from chronic exposure to low-level microwaves from wireless devices.

10. My research experience with microwaves allows me to view the science literature with a unique perspective, and the controversy over health effects mainly arises

because many experiments are not conducted properly. For example, some of those that show “no effect” from exposure to low-level microwaves from cell phones, WiFi or smart meters were not conducted over a long enough period of time and/or with “real” signals from ACTUAL devices. I can offer more critical and comprehensive analysis upon request.

11. Public exposure to low-level microwave radiation has reached a critical threshold resulting in adverse effects to public health: the epidemic of atrial fibrillation is one such example. It is well-documented that activation of voltage-gated calcium channels by ambient microwaves from wireless devices stimulates inappropriate release of calcium ions, and this can induce heart arrhythmias and/or atrial fibrillation that is not “fixed” by catheter ablation procedures nor by proper nutritional remineralization.

12. The very young and older populations are most susceptible to damage, and this can be readily observed in changes to red blood cells upon exposure to microwave signals from devices. Upon exposure to wireless device radiation, these cells can exhibit signs of oxidative stress or “rouleaux” formations in which the cells stick together and can cause strokes.

13. We all need the TIME and A PLACE to recover from exposure damage. Our homes should be a refuge from wireless signals if we so choose, which is why smart meter technology – presently in its infancy – is so harmful to us. The smart electric meters will be followed by smart meters on water and gas utilities, while implementation of “smart appliances” will activate the Zigbee antenna in the smart electric meters to add still more microwave signals to the constant spray of microwaves and radio frequencies in the home and neighborhood.

14. We can turn off our cell phones and WiFi but we cannot turn off our smart meters. The sharp signals from these devices are like knife stabs to our bodies while the “conductive emissions” or “dirty electricity” they generate by virtue of their switched mode power supplies bathes our homes 24/7 in low frequency (kilohertz) radiation known to interfere with molecular signaling in the body and further erode health. Over time, wireless smart meter radiation – together with our other chronic exposures – can and will erode our health just as chronic exposure to second hand smoke and other pollutants take their toll.

15. It is my professional opinion that we must protect our rights to a home and neighborhood environment free of emissions from smart meters and 5th Generation cellular technology (5G), as the present radio waves, cell phones and WiFi emanations are enough for our bodies to have to contend with. Such protection will limit further damage to public health which is vital also to stemming the tide of rising health care costs.

16. It is also my professional opinion based on my previous experiences as director of Penn State’s Center for Sustainability and eight years teaching courses in ecological

sustainability and green design, that smart meter technology is more damaging to the environment than the long-lived, robust electromechanical analog meters they replaced.

17. In addition to their hazardous radiation emissions, the smart meters are short-lived (5-7 years), require energy to operate (which generates more greenhouse gas emissions), and unnecessarily generate hazardous electronic waste while failing to improve the grid infrastructure or reduce residential power usage. From an ecological and full-cost energetic standpoint, "smart meters" are not "smart" at all.

18. There is a general perception that the energy from low-level microwaves is too weak to cause bodily harm. The following additional points clarify "How can low-energy radiation like microwaves cause harm?"

19. Emeritus Professor Martin Pall (Washington State U.) has made certain one of the ways wireless device radiation causes harm. Voltage-gated calcium channels in our bodies get activated by low-level intensity microwave radiation. This can cause:

- headaches & dizziness
- insomnia
- tinnitus & hearing loss
- fatigue
- memory and concentration problems
- anxiety / depression
- neuropsychiatric disorders
- heart arrhythmias
- worsening of diabetes
- & more, including cancer.

20. Microwaves are "electromagnetic radiation" just like sunlight and x-rays, which means they consist of an oscillating electric field (the "electro" part) and an oscillating magnetic field (the "magnetic" part). The electric field part of a microwave interacts with polar molecules like water and alcohol in the body, while the magnetic field part interacts with conductive metals in the body including iron (found in the hemoglobin in our blood), copper and aluminum.

21. There is a patented* field called "spectral chemistry" (based in part on the microwave spectroscopy discoveries of Nobel Laureates Townes and Schawlow) which makes use of what is called "fine structure" in atoms and molecules. These structures are receptive to microwave radiation – whether coherent (like lasers) or incoherent (like ambient levels around us) - and it explains why microwaves can change the charge states of atoms and molecules in the body which creates what we call "athermal" effects … effects *without heating*. When these charge states are altered, normal biochemical processes are disrupted or altered which can, over time and repeated exposure, result in damage. [*Reference: U.S. Patent 8262868 (2012)]

22. In spectral chemistry, it is recognized that <u>one oscillation</u> of a **microwave** (non-ionizing radiation) **has the same energy as** <u>one oscillation</u> of an **x-ray** (ionizing

radiation). There are a lot more oscillations PER SECOND in an x-ray than in a microwave, which is why an x-ray does damage so quickly ... but microwaves are still dangerous, even at low levels, if you ***give them enough time***.

23. Radiation safety teaches: minimize exposure TIME, increase DISTANCE from and utilize SHIELDING between you and the radiation source. Ionizing radiation damages very quickly, but with non-ionizing radiation, it just takes a lot longer to increase the statistical probability of damage. In today's world, we're increasingly sitting ducks in these radiation fields, giving them ample time to do damage ***absent the above mentioned radiation safety measures***.

24. With our WiFi, Bluetooth devices, baby monitors, cell phones, cordless phones, smart meters, exercise watches and other wireless devices, we are awash daily in a sea of microwaves of many different frequencies. The principle of "heterodyning" (in spectral chemistry) teaches that every combination (additive and subtractive) of these microwave frequencies is received by and potentially activates matter in our bodies, ***thereby increasing the statistical probability of damage many-fold.***

25. Once you understand how microwaves interact with matter, you understand better the mechanisms by which biological harm to humans and the environment can and does occur. ***We are ALL being damaged by the low-level microwaves from wireless devices***. It is one more pollutant in our very polluted world.

26. Based on the above scientific underpinnings of how microwaves cause biological damage, and based on the large body of scientific data demonstrating harm from chronic exposure to low-level radiation from wireless devices, it is my professional opinion that we must *restore and preserve our right to limit our exposure to this pollutant in our homes and neighborhoods by removing wireless smart meters and prohibiting the implementation of "5G" (5th Generation cellular network technology).*

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

Executed on date: 27 July 2019

Tania M. Slawecki, Ph.D.
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State of Pennsylvania
County of Centre

Sworn to and subscribed before me this 27th day of July 2019

Notary Public

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Alexa M. Geiswhite, Notary Public
College Twp., Centre County
My Commission Expires April 19, 2021
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

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The Pennsylvania State University
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Education

1987 B.A. Astronomy/Physics (minor: Philosophy), Lycoming College, Williamsport, PA
1989 M.S. Physics: Low Temperature Acoustics, Penn State University, University Park, PA
1995 Ph.D. Materials Science & Engineering: Polymer Physics, Penn State University

Professional Experience

2010 - **Research Associate, Microwave Processing & Engineering Center, Materials Research Institute, Penn State University**
Conduct proprietary research for industry and government agencies to fabricate new materials or improve on conventionally processed ones using microwave processing, an ecologically sensible, energy-saving manufacturing method. In charge of laboratory safety and equipment maintenance, trouble-shooting and repair; assist students with microwave-related projects that utilize our facilities; gradually preparing manuals for our custom designed microwave furnaces ranging from 1.5 kW to 6 kW powered systems, including multi-mode and single-mode microwave cavities and 915 MHz, 2.45 GHz and 5.8 GHz systems. Use materials characterization tools, most often x-ray diffraction and scanning electron microscopy, to evaluate microwave fabricated materials. Materials include powdered metals, ceramics, alloys and polymers with special studies that involve evaluating properties of materials in pure electric or magnetic field components of the microwave to help us understand what part of the microwave field is most influential on outcome. Prepare detailed reports on findings.

2006 - 2010 **Research Associate, Materials Research Institute at Penn State**. With Prof. Rustum Roy, utilized materials characterization tools to investigate various radiation fields and their effects on physical matter, especially water; large focus on structure of water and investigating ultradilute colloidal solutions and waters having unique properties. Used materials characterization tools including Raman, infrared, and UV-Vis spectroscopies, surface tension and zeta potential measurements, Gas Discharge Visualization (GDV), and numerous others as relevant to the situation.

2004 – 2006 **Co-PI, Bios-Materials Research Initiative, Materials Research Lab, Penn State**
With Prof. Rustum Roy, obtained seed grant funding to explore phenomena at the interface between materials science and living systems with a strong focus on evaluating unconventional electromagnetic therapeutic devices.

2001 - 2004 **Director, The Center for Sustainability, College of Engineering, Penn State**. Oversaw the establishment of 8.5-acre demonstration site for ecological technologies; instructed and supervised students in hands-on projects including developing a biointensive mini-farm, design and construction of small structures using recycled materials and earthen architecture; small passive and active solar projects including a 1.5 kW PV array; wind-power project; a small constructed wetlands; various "living machine" models for water treatment; and PI on the Growing Greener grant funded Penn State Living Machine Project for ecological wastewater treatment. Administrative and financial responsibilities.

2000 - 2006 **Assistant Professor, Science, Technology and Society Program, Penn State** …an interdisciplinary program in the College of Engineering. Developed and taught 400-level courses "Projects in Sustainable Living", "Living Machines: From Conception to Construction", "Green Design and Technologies", and the 200-level "Integrative Medicine and Society". Developed, secured grant funding for and co-taught a pilot course on "Integrated Systems and LEED Certification" for senior engineering and design students at Penn State University, working in collaboration with the U.S. Green Building Council.

1998 - 2000 **Research Associate, The Center for Sustainability** at Penn State University and in the Science, Technology and Society Program at Penn State. Assisted with development and implementation of the first "Projects in Sustainable Living" hands-on learning course, supervised student projects and oversaw the development plans and implementation of the first 7-acre demonstration site provided to the Center for Sustainability which entailed working with university administrators and local code officials.

1995 – 1998 **Physical Scientist, National Institute of Standards and Technology, Gaithersburgh, MD** Responsible for assisting guest researchers to conduct experiments on the two Small Angle Neutron Scattering (SANS) beam lines in the Reactor Radiation Division. Responsible for ensuring guest researchers followed radiation and laboratory safety regulations. Reviewed and helped to score applications submitted for beam line use. Primarily in charge of the shear cell apparatus used on the beam line in addition to other standard configurations.

1989-1995 **Research Assistant**, **Department of Materials Science**, Penn State University

1987-1989 **Research Assistant**, **Department of Physics**, Penn State University

Membership/Professional Organizations

2001 - 2004 Pennsylvania Partners in Agriculture, Health, Education and the Environment
1992 - The Pennsylvania Association for Sustainable Agriculture

Honors

1986	National Society of Physics Students Scholarship
1987	Class Valedictorian
1995	Hoechst-Celanese award for excellence in Polymer Science
2015	Honorary Lifetime Membership, PA Association for Sustainable Agriculture

Publications:

1. McKenna J, Slawecki TM, Maynard JD. (1990) Second and fourth sound modes for superfluid helium in aerogel. *Physica B: Cond. Matt.*. 165-166(part1): 581-582

2. McKenna J, Slawecki TM, Maynard JD. (1991) Observation of a second-sound-like mode in superfluid-filled Aerogel. *Phys. Rev. Lett*. 66: 1878-1881

3. McKenna J, Slawecki TM, Maynard JD. (1991) Observation of a second-sound-like mode in superfluid-filled Aerogel. *J. Acoust. Soc. Am.* 89: 2007

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7. Slawecki TM, Glinka CJ, Hammouda B. (1998) Shear-induced micellar crystal structures in an aqueous triblock copolymer solution. *Phys. Rev. E*. 58: R4048.

8. Karim A, Slawecki TM, Kumar SK, Douglas JF, Satija SK, Han CC, Russell TP, Liu Y, Overney R, Sololov J, Rafailovich MH. (1998) Phase Separation-Induced Surface Patterns in Thin Polymer Blend Films. *Macromolecules* 31(3): 857-862.

9. Ruzette, A-VG, Banerjee P, Mayes AM, Pollard M, Russell TP, Jerome R, Slawecki T, Hjelm R, Thivagaraian P. (1998) Phase Behavior of Diblock Copolymers between Styrene and n-Alkyl Methacrylates. *Macromolecules* 31(24): 8509-8516

10. Edler KJ, Reynolds PA, Brown AS, Slawecki TM, White JW. (1998) Shear and salt effects on the structure of MCM-41 synthesis gels. *J. Chem. Soc., Faraday Trans*. 94:1287-1291

11. Roy R, Hoover MR, Bhalla AS, Slawecki T, Dey S, Cao W, Li J, Bhaskar S. (2007) Ultradilute Ag-aquasols with extraordinary bactericidal properties: the role of the system Ag-O-H2O. *Mat. Res. Innov.* 11: 3-18.

12. Cornwell J, Roy R, Cross LE, Slawecki T, Rao ML. (2009) Surprising observations on phenomena created from modified 2.45 GHz source. *Mat. Res. Innov*. 13(1): 11-14.

13. Zhang, Y., Huang K., Agrawal, D.K., Slawecki, T., Zhu, H., Yang, Y. (2017) Microwave Power System Based on a Combination of Two Magnetrons. *IEEE Trans Electron Dev.* 64(10): 4272-4211.

14. Zhang, Y., Agrawal, D.K., Cheng, J., Slawecki, T, (2018) Microwave Power Absorption Mechanism in Powdered Metals. *IEEE Trans Microwave Theory & Tech*. 66(5): 2107-2115