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ROBERT F. SCHIFFMANN

Profile:

- Microwave Expert
- Expert witness in over 20 cases
- Actively working with microwaves since 1961
- Leading consultant on microwave products and applications
- Developed numerous microwavable products and processes
- Consulted for over 100 companies
- Teach and lecture internationally on many microwave disciplines

Microwave Background:

- Actively working with microwaves, microwave ovens and microwave processing since 1961
- Personally responsible for numerous successful microwave products and processes
- Lecture and teach internationally in all microwave heating areas
- Invented and patented many microwave systems, processes and devices
- Recognized internationally as a leading microwave consultant and expert

Expert Witness Activities:

- **Microwave cases:**
 - Microwave oven injuries: 5 cases
 - Intellectual property: 3 cases
 - Patent infringement: 5 cases
 - Industrial fires: 3 cases
 - Medical malpractice: 1 case
 - Class action: 1 case
 - Felony murder: 1 case
- **Non-Microwave cases:**
 - Trade secret violation: 2 cases
- Represented Plaintiffs and Defendants
- Testified in Depositions, Trials and Arbitrations
- References available

Work Experience:

1978 to Present"

R.F. Schiffmann Associates, Inc., New York, NY

President

- Contract R&D consultants on microwaves and microwave products and systems
- Developed industrial microwave systems for foods, pharmaceuticals, aeronautics, foundry, and more
- Developed microwavable foods, packages, cookware
- Developed non-microwave consumer food and non-food products
- Product performance testing for microwave foods, packages, cookware
- Provide in-house training on different microwave disciplines

1973 to 1978

Bedrosian and Associates, Inc., Alpine, NJ

Partner

- New product and process consultants
- Developed non-microwave consumer food and non-food products
- Developed several microwave products and processes

1959 to 1971

DCA Food Industries, Inc., New York, NY

Senior Research Scientist & Project Manager

- Developed several major microwave processing systems for the baking industry
- Research and development on baking technology
- Development of food service products

1963 to 1964

Nucleonics Corporation of America, Inc., Brooklyn, NY

Vice President of Research

- In charge of radioactive chemical laboratory
 - Prepared radioactive standards
- Provided Health Physics services
- In charge of radioactivity film badge service

Education:

- BS: Columbia University – Pharmacy
- MS: Purdue University – Physical & Analytical Chemistry
- PhD (not completed): New York University – Biophysics

Microwave Consulting Activities:

- **Industrial Microwave Processing:**
 - Applications R&D and design of numerous microwave processes, including:
 - Microwave proofing of dough
 - Microwave frying of donuts
 - Microwave baking of bread
 - Microwave drying for manufacture of airplane components
 - Microwave preparation of muesli
 - Microwave drying of blood oxygenators
 - Microwave frying of fish and chicken
 - Microwave processing of extruded materials
 - More

- **Other Microwave Systems:**
 - Sterilization of medical and dental instruments
 - Microwave warming of blood plasma
 - Microwave/convection cookware system
 - Conversion of Hematite to Magnetite
 - Drying of spent catalyst
 - Designed an analytical laboratory microwave oven
 - More

- **Consumer Microwave Products:**
 - Numerous microwavable foods products, including:
 - “Amazin’ Glaze”: caramel microwave popcorn
 - “Deli Selections”: microwavable sandwiches
 - “Highliner Frozen Fish Dinners”
 - “Lean Cuisine Chicken Pot Pie”
 - Many more
 - Microwave packaging:
 - Designed special microwavable packaging
 - Performance testing many different microwave packages
 - Determined cause of spontaneous fracture of glass jars in microwave ovens
 - Microwave cookware:
 - Performance testing of consumer cookware
 - Performance testing of hospital feeding systems
 - Developed patented microwave/convection microwave cookware
 - Microwave ovens:
 - Performance testing of numerous microwave ovens
 - Designed unique microwave “turntable”
 - More

Professional Activities:

- International Microwave Power Institute: (IMPI)
 - President 1973 – 1983
 - Chairman 1983 – 1985
 - Member – Board of Governors: 1970 – 1985; 1993 - 1994
 - Fellow of the Institute: elected in 1983
 - Scientific Section:
 - Vice President: 1993 –1994
 - Board Member: 1990 - 1995
 - Technical Program Chairman of 28th Annual Symposium: 1993
 - Best Paper Award: 1982
 - Associate Editor of the Journal of Microwave Power

- Microwave Working Group (MWG)
 - Vice President: 2001 to present
 - Vice Chair: 3rd World Congress on Microwave and RF Applications: 2002, Sydney Australia
 - Chair: 4th World Congress on Microwave and RF Applications: 2004, Austin Texas
 - Industrial Program Chair for 1st and 2nd World Congresses

- Microwave Technology Association of the UK (MTA-UK)
 - Honorary Lifetime Member: 1992

- Association for Microwave Power in Europe for Research and Education (AMPERE):
 - Founding Member
 - Session Chair, Invited Speaker and Speaker at numerous Annual Conferences

- Chairman or Member of Technical Committee for
 - Plastic Microwave Cookware for the Plastics Association of America
 - Disposable microwave packaging for the Single Service Institute
 - ASTM Committee on microwave susceptors

- Institute of Food Technologists: (IFT)
 - Emeritus Professional Member
 - Scientific Lecturer on microwave topics: 1988 – 1991
 - Invited speaker on microwave processing: 1992

- Institute of Packing Professionals (IOPP)
 - Member Consultants Council

Microwave Conferences and Speaking Engagements:

- Conferences:
 - Program Chairman for nearly 20 international microwave conferences
 - Vice Chairman: 3rd World Congress on Microwave and RF Applications: 2002, Sydney Australia
 - Chairman: 4th World Congress on Microwave and RF Applications: 2004, Austin Texas
- Invited Speaker on Microwave Topics at many International Conferences, including:
 - American Chemical Society
 - American Ceramics Society
 - Technical Association of the Paper and Pulp Industries
 - American Pharmaceutical Association (APhA)
 - Packaging Council of Australia
 - Australian Microwave Association
 - AMPERE Conference, Bayreuth Germany, 2001
 - Many more

Microwave Teaching Activities:

- Center for Professional Advancement:
 - Course Director and Lecturer for over 20 years:
 - Industrial Microwave Technology
 - Microwave Oven Technology
 - Industrial Drying of Heat Sensitive Materials
 - Course are presented in USA and The Netherlands
 - In-house seminars for:
 - Merck Pharmaceutical
 - Norsk Hydro (Norway)
 - Kimberly Clark
- Institute for Food Technologists:
 - Scientific Lecturer on microwave topics: 1988 – 1991
- Professional Seminars for:
 - International Microwave Power Institute: (IMPI)
 - Institute of Food Technologists: (IFT)
 - American Pharmaceutical Association (APhA)
 - American Association of Cereal Chemists
- Private In-House Seminars for numerous US companies

Microwave and Other Patents:

- Microwave Technology:
 - 27 U.S. patents for systems, devices, processes
- Non – Microwave:
 - 2 U.S. patents for extending the shelf life of fruits and vegetables
- Foreign patents: numerous counterparts of the above

Microwave Publications:

- Over 50 publications covering all aspects of microwave heating
- Co-author of book: Microwave Packaging: 1992
- Recently:
 - Chapter on “Microwave Processes for the Food Industry” in Handbook of Microwave Technology for Food Applications
 - Chapter on “Packaging of Microwavable Foods” in The Microwave Processing of Foods”
 - “Techniques for Accurately Measuring Temperature in Static Liquids During Microwave Heating”, Proceedings of the 10th International Conference on Microwave and RF Heating, Modena Italy
 - "A Primer on Evaluating the Economics of a Microwave or RF Processing Systems", Proceedings of the Fourth World Congress on Microwave and RF Applications

Microwave Awards and Honors:

- Putnam Award – Top Honors: for Development of the Microwave Donut Proofer: 1973
- Putnam Award – Honors: for Development of the Microwave Donut Fryer:1973
- Fellow of the International Microwave Power Institute: 1983
- Honorary Lifetime Member of the Microwave Technology Association of the UK: 1992
- Best Paper Award: International Microwave Power Institute: 1982

Additional Information:

- References, additional biographical information, and copies of publications and patents are available upon request