

EDITOR: G. P. Rodrigue

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Number 72, Summer 1973

KING, SAAD, TOMIYASU GIVEN LIFE MEMBERSHIP

At the awards program of the annual MTT Symposium Banquet three Fellow grade members were honored for their continuing contributions to the group by being named Honorary Life Members of ADCOM. Those so honored were Donald D. King, Theodore S. Saad, and Kiyo Tomiyasu. They join A. C. Beck and W. W. Mumford as Life Members. The three share many common aspects of their backgrounds. All have been Transactions Editor. All are former ADCOM chairmen, all three were educated in Cambridge (Harvard—2 MIT—1) and all were born within one year of each other. A very brief biography of each is given below.

Also honored at this year's Banquet were Harrison E. Rowe and Dale T. Young, recipients of this year's Microwave Prize. Ted Saad received the National Lecturer plaque as retiring ADCOM President.

Donald D. King was born in Rochester, New York and received his A.B., A.M., and Ph.D. degrees from Harvard University in 1942, 1944, and 1946, respectively. Don has been an ADCOM member almost continuously from its earliest days in 1952. He served as Transactions Editor from 1959 to 1962 and was ADCOM Chairman in 1964. For a number of years Don has served on the ADCOM nominations and awards committee. He was made a Fellow of the IEEE in 1959. Don's earliest professional microwave experience was as a staff member of the pre-radar Officer's Training School at Cruft Laboratory, Harvard, in 1943. In 1947 he was Assistant Professor of Applied Physics at Harvard and joined Johns Hopkins' Institute for Cooperative Research as an Associate Professor in 1948. In 1950 and '55 he was named Assistant Director and Director, respectively, of the Radiation Lab. He was subsequently Vice President for Research of Electronic Communications, Inc., Timonium, Maryland. Don has also served as Director of the Electronics Research Lab of Aerospace Corporation, Los Angeles, and is currently with Phillips Laboratories, Briarcliff Manor New York.

Theodore S. Saad has pioneered many new ventures in microwave publications with Horizon House's Microwave Journal and Microwave Handbooks, and more recently Artech House's reprint volumes. In addition to his activities as Editor-in-Chief of Microwave Journal and Vice President of Horizon House, Ted is President of Sage Laboratories and semi-official historian of the MTT group. Ted is well qualified for this role, having served on ADCOM since 1954. He was Transactions Editor from 1954 to 1956 and ADCOM Chairman in 1959. In 1955 he left Sylvania at Woburn, Massachusetts to establish his own microwave company -- Sage Laboratories.

He is a genuine New Englander, born in Boston, educated at M.I.T. and running his own business in suburban Boston for almost twenty years. He was MTT National Lecturer in 1972-73 and visited a record number of Chapters in that role. His Fellow Award "for contributions to the microwave field through technical publications and industrial leadership" was made in 1965.

Kiyo Tomiyasu has been an active participant in MTT affairs from its beginning in the early fifties. Kiyo was born in Las Vegas and received B.S., M.S., and PhD degrees from Cal Tech (1940), Columbia (1941), and Harvard (1948), respectively. He was first named to MTT ADCOM in 1955 and became editor of the Transactions on Microwave Theory and Techniques in 1957. In 1961 he served as Chairman of ADCOM. He was made a Fellow of IEEE in 1962.

Kiyo began his microwave industry career in 1949 with the Sperry Gyroscope Company at Great Neck, New York, and in 1952 Sperry made him a Section Head for Microwave Research. In 1955 Kiyo joined General Electric Company, Palo Alto, as Consulting Engineer and transferred to G. E. Schenectady in 1960. Kiyo has been with G.E. for over fifteen years and is now located at G.E.'s Valley Forge Space Center.



KING



SAAD



TOMIYASU



PRESIDENT'S MESSAGE

by J. B. Horton

For MTT, the annual G—MTT Symposium marks the midpoint of the year. This is the time of group awards, committee meetings, renewal of old friendships — the start of new ones, and last but not least by any means, the symposium itself. Our meeting in Boulder this year was a success in all aspects. Much of the credit goes to members of the Denver—Boulder Chapter and, in particular, to the symposium Steering Committee who spent a good part of two years preparing for the meeting. My compliments and thanks to the Denver—Boulder Chapter for a fine job.

ACDOM activities at the symposium were highlighted by the approval of two new awards — the Microwave Career Award and the Outstanding Microwave Application Award. The Microwave Career Award is to be awarded for a distinguished career in the microwave field; the Application Award is to be awarded for a specific contribution to microwave technology by an emerging worker in the field. These awards are a supplement to the Microwave Prize and represent two types of contributions for which we believe MTT should give recognition. My thanks to Kiyoo Tomiyasu and the Awards Committee for carrying the work through. Details of the awards are given in this issue of the NEWSLETTER. If you have candidates for the awards, please send their names to Kiyoo.

Looking at goals for this year (ref. G—MTT NEWSLETTER, January 1973), we have made progress on many of the fourteen goals. The Group's five—year plan for 1973—1977 was completed and included in the petition for society status submitted in April. The first step in the revision of the Group awards has been completed with establishment of the Microwave Career Award and the Application Award. We have beefed—up the Membership Service Activities with the addition of a new Associate Editor for the NEWSLETTER, restructuring the Group Membership Drive, and additional effort to give assistance to the chapters by improved Group—Chapter communications and Group financial support for chapter meeting notices. Work by the Meetings and Symposia Committee has resulted in renewed symposium activities (we had three proposals for the 1975 G—MTT symposium), sponsorship of the Submillimeter Conference in Atlanta in 1974 and increased activities in conjunction with several international symposia. Publications Committee activities include a renewed effort to obtain more listings for the Transactions and a new look at the Transactions as a whole. This work is in the early stages, but should be completed this summer. Other work such as establishing the new Publicity Committee and updating the Bylaws require more time, but are now in work.

In summary, during the first half of the year the Group's activities have picked up considerably. We have completed several of the 1973 goals and are working on most of the others. Our study and review of the Transactions and publications in general, along with related factors such as the Group technical profile, are now in progress. This is a major goal for 1973 and should result in a closer tie between the Symposium technical program, the Transactions and the Group's long range technical profile. All in all, the first half of the year has been successful and the outlook for the second half is good.

ATLANTA IN '74 PALO ALTO IN '75

At the June ADCOM meeting proposals to host the 1975 Symposium were received from Boston, Long Island—New Jersey, and San Francisco. The proposal of the San Francisco Chapter to hold the meeting at Rickey's Hyatt House in Palo Alto from May 12 through 14, 1975 was accepted. Wes Mathews, Philco—Ford, is Steering Committee Chairman and Don Parker, SRI, is Vice Chairman. The program committee is headed by Steve Adam of H—P with Lou Cuccia, Philco—Ford, assisting.

The 1974 Microwave Symposium as previously announced will be held in Atlanta, Georgia, June 12 through 14, 1974. Meetings will be held on the Georgia Tech campus with the nearby Sheraton Biltmore Hotel serving as Conference Headquarters. Also meeting at Georgia Tech during this week will be four other related conferences. Thus attendees will have an unusual opportunity for exchanges with colleagues in other areas of electromagnetics. The Table below shows complete titles and dates for all conferences.

"TOGETHER IN '74'"

International Conference on Submillimeter Waves and Their Applications June 5—7, 1974

1974 International IEEE/G—AP Symposium June 10—12, 1974

USNC/URSI Meeting June 11—13, 1974

Twelfth Symposium on Electromagnetic Windows June 12—14, 1974

1974 International IEEE/G—MTT Microwave Symposium June 12—14, 1974

Please keep in mind that the work discussed here has been an effort by all the members of ADCOM. The success of these activities in most cases, depends on individual contributions by those involved. If you have comments or suggestions about the ADCOM activities, or better yet, if you wish to participate, let us know. Please feel free to write or call any of the ADCOM members about the Group activities



Horton presents Microwave Prize to Dale T. Young



EDITORS NOTES

by Pete Rodrigue

Contained in this issue are several references to the June MTT Symposium at Boulder. That conference was pleasant indeed. It featured spectacular Colorado scenery, some very fine weather (after a soggy start), a record banquet attendance and our first experience with a professional banquet speaker, and a record number of technical papers covering a broad range of topics. (We also experienced our first demonstration, see Al Clavin's letter page 7). Inasmuch as next year's symposium will be held in Atlanta, I was somewhat preoccupied with observing the mechanics of the conference. One aspect of particular interest was the required number of seats per session room. A report on this semi-trivial study is outlined below.

Given a registration of 600 or so bodies, will they divide evenly into two groups of 300 for 2 parallel sessions and three groups of 200 for 3 parallel sessions? Obviously, the division will depend on the content of the sessions in progress. You need wait no longer, the results of this nascent scientific study are tabulated below:

	MONDAY A.M.		
	Introductory Session		
	195		
Millimeter and Submm Wavelength		Computer-Aided Microwave Practices	
256		116	
	MONDAY P.M.		
Millimeter Wave- length Components		Passive Solid- State Devices	
168		160	
	TUESDAY A.M.		
Microwave Delay Lines	Microwave Measurements	Active Solid- State Devices	
106	80	144	
	TUESDAY P.M.		
Civil Microwave Systems	Microwave Filters and Related Components	Microwave Noise Measurement and System Effects	
160	75	80	
	WEDNESDAY A.M.		
Active Solid- State Devices	Microwave Techniques in Biological Research	Waveguide Analytical Techniques	
197	75	35	
	WEDNESDAY P.M.		
Integrated Optics	MIC System Components	Biological Effects of Microwave Radiation	
90	120	70	

(These head counts were made about one hour into each session and before the Coffee Break which was usually followed by a general decline in attendance.)

And now for some rash conclusion drawings!
One quick conclusion is that relatively few people could find the Chemistry auditorium for the opening session.

It comes as no surprise that at any given time barely half the registrants are attending technical sessions. Some come early and leave early while others do the converse. It was a bit of a surprise that the hallways count (less precisely done of necessity) went something like Monday A.M. - 50, Monday P.M. - 35, Tuesday - A.M. - 20, Tuesday P.M. - 20, Wednesday A.M. - 30, Wednesday P.M. - 20. Surprisingly few were in the hallways while sessions were in progress, and therefore it seems that we lost a reasonable number to the mountains!

Another obvious conclusion is that theoretical and analytical topics are difficult to endure for our average attendee. We seem to flock more to broad brush treatment and state-of-the-art revelations.

Millimeters are of considerable interest as are solid state things, while Biology was less of a draw than I'd expected. One assumes that a correlation also exists between session interest and dollars available in a given field. That last item is hardly news!



Al Clavin receives Past President's Pin from John Horton



Lifer Mumford greets Kiyo Tomiyasu and Wife.

BY LAW MODIFICATION TO INCLUDE TWO NEW MTT AWARDS

The two awards described below were approved by MTT ADCOM in June and the IEEE Awards Board on July 9, 1973. The Microwave Career Award replaces the W. W. Hansen Award earlier approved by ADCOM but never activated because of monetary pressures.

MICROWAVE CAREER AWARD

The Group shall present an award known as the Microwave Career Award. This Award shall be considered annually but not necessarily presented annually. The Award shall be made to an individual for a career of meritorious achievement and outstanding technical contribution in the field of microwave theory and techniques. The individual must be a member of the IEEE.

Selection of the recipient of the award will be the responsibility of the G-MTT Operations Committee which will make its recommendation to the G-MTT Administrative Committee at its Annual Meeting. Nominations for the Award can be submitted by any member of the Group. The Award shall consist of a suitable certificate, a plaque, a cash sum of five hundred dollars, and a feature publication in the IEEE Transactions on MTT.

GUIDE FOR MICROWAVE CAREER AWARD

The Award shall be made to an individual for a career of meritorious achievement and outstanding technical contribution in the field of microwave theory and techniques. The eligibility requirements are publication in technical journals, presentation of lectures, contributions to the advancement of microwave technology, or other technical contributions to be considered in conjunction with any or all of the areas of contributions mentioned above.

MICROWAVE APPLICATION AWARD

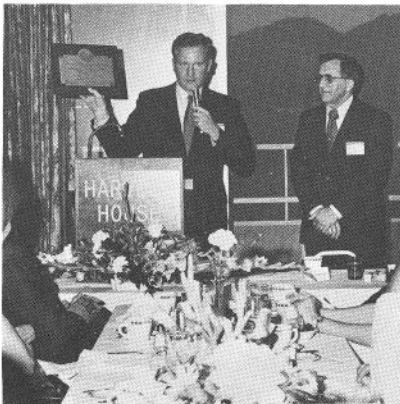
The Group shall present an award known as the Microwave Application Award. This Award shall be considered annually but not necessarily presented annually. The Award shall be made to an individual for an outstanding application of microwave theory and techniques.

Selection of the recipient of the Award will be the responsibility of the G-MTT Operations Committee which will make its recommendation to the G-MTT Administrative Committee at its Annual Meeting. Nominations for the Award can be submitted by any member of the Group. The Award shall consist of a suitable certificate, a cash sum of one hundred dollars, and a feature publication in the IEEE Transactions on MTT.

GUIDELINE FOR MICROWAVE APPLICATION AWARD

The Award shall be made to an individual for an outstanding application of microwave theory and techniques. The eligibility requirements are creation of a new device, component or technique, novel use of a device or component, or a combination of any or all of the above. Publication of a paper is not required.

The Award is aimed primarily towards young or emerging workers.



Horton presents Saad National Lecturer Plaque



Chairman Wait MC's Rowdy Banquet



ADCOM MEETING HIGHLIGHTS

by R. A. Rivers

President John Horton started the meeting by reviewing recent activities. He advised that the Petition for Society Status had been submitted on schedule. The only response thus far was for additional copies of the petition.

Bob Knox reported some 16 Journals and magazines on the Public Relations Committee release list. It should be noted that this is a service committee that will provide a release medium for your people type releases — contact him, he won't chase you for releases.

There was some discussion of procuring an MTT tie pin with the MTT symbol. There is a minimum cost for a minimum quantity. Action was left to some future time, the idea neither being enthusiastically supported nor immediately killed.

Chapter activities were reported very briefly with one indicating decreasing chapter membership and another indicating increased chapter meeting attendance through the use of postcard mailing permitted by the Chapter Communications Subsidy. Bob Garver showed a copy of a Washington Chapter MTT Newsletter. This might be considered by others.

Frank Arams reported on an attempt to assess certain programming charges that would eventually pass through QEC and SSCC to the MTT. This is supposedly due to the fact that MTT members have a choice of 14 different combinations of services. It appears as though that is an extremely difficult programming task and they want \$18,000 to cover costs. The amount was later reduced to something like \$9,000. There was no support for covering any of this charge which appears to be an effort on someone's part to reduce his overhead by finding someone to accept it as a direct charge.

There was a discussion of a proposal by SSCC to reduce the add on charge for MTT members to \$4.00 from \$5.00 and to reduce MTT billing to \$3.50 from \$4.00. This add on charge was fought out over several years. It seems as though it has

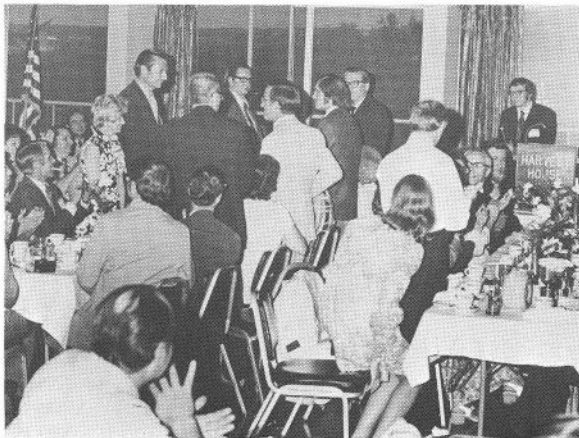
just been settled and an attempt is made to reopen the problem. In light of the generally increasing costs of publishing, the ADCOM felt it would be pointless to reduce the cost now, only to have to increase it again next year. The ADCOM position was leave it as it is now. MTT Delegate to SSCC, Warren Cooper, was instructed to insure that the principle of equal charge to all groups for SSCJ not be violated.

Fred Rosenbaum, Editor of the MTT Transactions, reported on an additional special issue on Integrated Optics in January, 1975. He also reported on an alternative Editing and Printing Process. It appears as though our printing process has a \$22.50 page Headquarters Editorial charge, also an \$85.00 page Printing and Distribution charge for a total cost of \$105.50 per page. GSU has an \$11.25 Headquarters Editorial and a \$35.00 Printing and Distribution charge for a total of \$47.05 per page. The difference is so great as to demand consideration of reduced editing and photo-offset reproduction. Fred Rosenbaum suggested that we write review papers of the order of 15 pages in current areas of interest. Bob Beatty suggested a possible greater yield of Symposium papers if a Special Editor was appointed for the Symposium Issue. As a result of the apparent need for an in depth consideration of the various publication alternatives John Horton appointed an AD HOC Committee to review publications.

Kiyo Tomiyasu had previously circulated by mail, two proposed amendments to the By-Laws dealing with additional Awards. The Microwave Career Award is a new award for career achievement in the Microwave Field. It was passed with minor modifications. A Microwave Applications Award was also proposed and passed. The W. W. Hansen Award which has never been operational was then voted out. The details of the Award restrictions will appear in the By-Laws change notice.

Frank Arams reported on meetings including the Sub-Millimeter Symposium. The ADCOM approved the move of dates to June 5 - 7, 1974. In addition the subject of MTT underwriting of papers in OSA Journal from the Sub-MM Symposium was discussed and the ADCOM voted to NOT underwrite any OSA publication of papers.

Presentations for the 1975 Symposium were made by Doug Gray for the San Francisco Chapter, Marty Coulton for the New Jersey and Long Island Chapters and by Ralph Grabowski for the Boston Chapter. Each made a verbal presentation and answered questions. Voting was restricted to voting members of ADCOM and the San Francisco Proposal for the 1975 Symposium was accepted.



"Will the Local Committee please stand-up"



Wilbur Anson, Bob Beatty, and C. Eugene confer over cocktails.



CHAPTER ACTIVITIES

by L. R. Whicker

CHAPTER CHAIRMEN'S MEETING

Our annual Chapter Chairmen's Meeting was held on Sunday, June 3, 1973 at Boulder, Colorado. This meeting was perhaps the best we have had to date. Attendees at the meeting included one or more representatives from fifteen chapters, Dr. Paul Kaduli, region 10, Leo Young, Director Division IV, and nine members of ADCOM.

One of the main topics of conversation was concerned with improving chapter meetings and advertising for such meetings. Some of the suggested methods or methods used by various chapters included:

- The chapter officers should appoint "key" representatives in various companies to promote chapter meetings. These representatives will post announcements and remind the friends and co-workers of upcoming meetings.
- Appoint a host at each meeting to greet attendees and promote membership in the IEEE and the MTT.
- Don't let Ex-Chairmen off the hook---form executive committees and keep them busy.
- Try to make part of the meeting social and occasionally have programs that wives can attend.
- ADCOM will provide funds for mailing postcards announcements of meetings for chapters who can't get Section support.

The other topic that received considerable attention concerned better communication between ADCOM and Chapter members and officers. Some of the key points are as follows:

- ADCOM minutes are presently mailed to Chapter Chairmen. These now will be mailed to Vice-Chairmen also.
- A few minutes of each Chapter meeting should be devoted to review of ADCOM minutes to keep general membership informed.
- Chapter Chairmen are non-voting members of ADCOM -- they should attend and participate in ADCOM meetings.
- Chapter reporting is, in general, poor. Reports are generally sent to the Section or IEEE Headquarters rather than to the parent group or Society. A check list of duties for Chapter Officer's will be drawn up by John Horton and myself and distributed to Chapter Officers.
- Chapter Chairmen are asked to forward comments on speakers which they have had and make recommendations for those who should be added to our speakers list.

In general, the Chapter Chairmen's Meeting was a success with everyone present making a contribution.

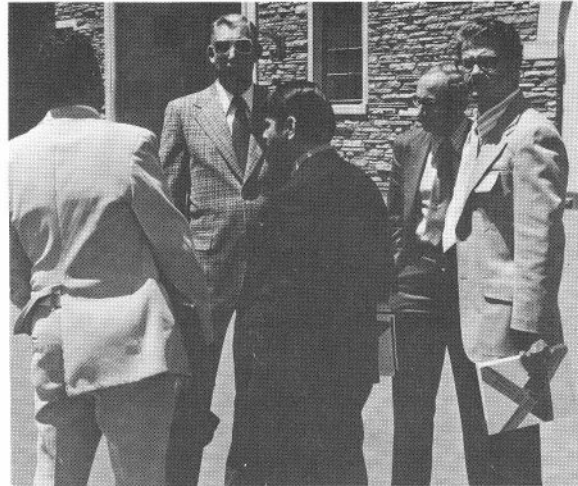
NATIONAL LECTURER

Thus far, John Allen has lectured at seven Chapters including:

- Atlanta
- Dallas
- Phoenix
- San Francisco
- Los Angeles
- San Diego
- Boulder

Recommendations for next year's National Lecturer are presently being solicited. Please let me know who you would like.

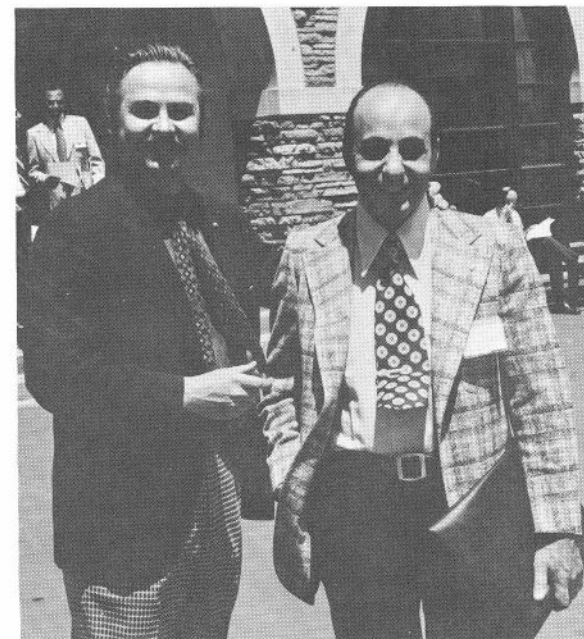
RUMP SESSIONS



Gordon Harrison, Rudy Henning, and Nat Lipetz Facing Camera.



Pat Romanelli and Lamar Allen.



Sy Okwit and Jesse Taub

LETTERS

Dear Ed:

I don't know whether or not you got a copy of the attached. As you know, we had a protest march on campus in which we were depicted as killing Vietnamese peasants with microwaves. Thought you might want to publish this in the Newsletter.

Of course, it is my opinion that unilateral disarmament has never been very successful and that we need to remain in a strong defensive posture until a negotiated disarmament is agreed to.

Al Calvin

Ed note: Published below is protest letter.

Because of Amerika's technological expertise, the world (or at least the wealthier parts of it) now has the use of "THE MICROWAVE". This beautiful little "thingy" can cook a turkey in the amount of time it takes to switch channels to another Thanksgiving Day football game. But don't let grandpa with his pacemaker get too close. Please do not think that the only use of the microwave is cooking food quicker and driving down the oven cleaner market. The uses in communication are many and wonderful. However, the idiot that composed this leaflet couldn't begin to explain them to you. One thing I can probably tell you without fear of prosecution is that because of "THE MICROWAVE" you can have (for your very own) a "20⁰ K coolable Pin Diode Switch with Very Low Losses in L-band; not to mention the benefit of a "Large Pulse Compression Ratio Obtained with non-linear Interaction of Bulk Acoustic Waves LiNbO₃".

However, someone had to pay for all the tedious research that went into developing "THE MICROWAVE" and unfortunately the Pentagon made the best offer. In return for their financial aid, these murderers were afforded the opportunity of killing much more efficiently. Long discoursed can be made concerning the value of long range target acquisition, fire control, missile control, multi-channel radio communication, data-transmission, tactical jamming, ship-to-shore gun control, ICBM and air-to-air ground missile control, electronic countermeasures, and air-to-air target acquisition. But one can only wonder what the mortality rate of Jews in NAZI Germany would have been if Eichmann had had the "Benefit" of "THE MICROWAVE".

The point is, gentlemen, that THE RESEARCH YOU ARE DOING, although it has and will have many positive rewards, IS BEING USED BY ORGANIZED MASS EXTERMINATORS OF HUMANITY. AND IT IS YOUR RESPONSIBILITY. WERE THE PERSONS WHO INSTALLED THE GAS CHAMBERS IN AUSCHWITZ MERELY PLUMBERS OR ACCESSORIES TO MURDER? have a nice conference gentlemen.

Ed note: The following letter was forwarded by Leo Young.

Dear Leo:

In reference to your comments in G/MTT Spring, 1973, on microwave ovens, I would like to add the following information.

There are a number of very basic items relating to electromagnetic energies that the general public is not familiar with. They can be difficult to explain to the average housewife even by a skilled microwave engineer.

1. Microwave power density decreases with distance. In other words, a monitor reading 1 mW/cm², the maximum production standard, at a distance of two inches from the oven, reads much lower at a position of 24 or 36 inches from the oven. It sounds simple but because 2450 MHz energy can not be seen like light or felt like heat, it is difficult to understand.
2. Food cooked or water heated by microwave power does not contain a residue of the microwave energy nor is it changed chemically. The food is only cooked or heated. Again it sounds simple enough but some people have difficulty understanding it.
3. Microwave power is non-ionizing and does not produce radiating atomic particles such as ionizing radiation produced by x-rays, and cosmic and nuclear radiation. The TV scare is fresh in peoples' minds and non-ionizing radiation is more difficult to understand than x-rays at this time.

It may tax the ingenuity of every electrical engineer to explain the above points to his wife, neighbor or bridge friend. But the cooperation of all knowledgeable engineers is needed to patiently explain and inform the public.

Very truly yours,
AMANA REFRIGERATION, INC.

Arnold M. Bucksbaum
Design Engineer
Radarange Microwave Ovens



Editor Rosenbaum seems up to something

Dear Ed:

After seeing the list of IEEE Fellows who are G-AP members in the June 1973 issue of G-AP NEWSLETTER I thought it would be a good idea to do the same for the 202 G-MTT Fellows. The enclosed list includes the new Fellows effective January 1, 1973.

Sincerely yours,
K. Tomiyasu

Editor's note:

Here they are listed by states alphabetically and by ZIP code within states.

- John C. Cacharis
5802 E. Calle Del Norte
Phoenix, Az 85018
- Daniel E. Noble
Motorola
P. O. Box 2953
Phoenix, Az 85036
- T. E. Tice
545 N. Miller
Mesa, Az 85203
- R. E. Samuelson
8201 E. McDowell
Scottsdale, Az 85257
- Irving Kaufman
Arizona State Univ.
Dept. of E. E.
Tempe, Az 85281
- Z. A. Kaprielian
University of Southern Cal
University Park
Los Angeles, Ca 90007
- J. L. Barnes
14710 Mulholland Dr.
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- W. D. Herschberger
Univ. of Calif.
College of Engr.
Los Angeles, Ca 90024
- Gabor C. Temes
Univ. of California
Elec. Sci. Engr. Dept.
Los Angeles, Ca 90024
- S. Sensiper
6011 Holt Ave.
Los Angeles, Ca 90056
- Robert B. Muchmore
720 Napoli Drive
Pacific Palisades, Ca 90272
- H. A. Rosen
14629 Hilltree Rd.
Santa Monica, Ca 90402
- Dean B. Anderson
8521 Colima Rd.
Whittier, Ca 90605
- A. Clavin
5290 Round Meadow Rd.
Calabasas, Ca 91302
- E. N. Torgow
9531 Donna Ave.
Northridge, Ca 91324

- K. C. Kelly
9360 Shoshone Ave.
Northridge, Ca 91324
- S. B. Cohn
5021 Palomar Dr.
Tarzana, Ca 91356
- Robert C. Hansen
18651 Wells Drive
Tarzana, Ca 91356
- H. N. Chait
5318 Bothwell Rd.
Tarzana, Ca 91356
- Ralph A. Lamm
15573 Briarwood Dr.
Sherman Oaks, Ca 91403
- Vincent Learned
California State Univ.
School of Engrg.
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- Louis J. Cutrona
7240 Enders Ave.
San Diego, Ca 92122
- J. B. Smyth
3555 Aero Ct.
San Diego, Ca 92123
- Nicholas A. Begovich
136 Miramonte Dr.
Fullerton, Ca 92632
- L. Stark
Hughes Aircraft
Box 3310
Fullerton, Ca 92634
- G. L. Matthaei
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Menlo Park, Ca 94025
- Edward M. Jones
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Menlo Park, Ca 94025
- R. C. Honey
111 Grove Drive
Menlo Park, Ca 94025
- B. A. Auld
270 Dedalera Dr.
Menlo Park, Ca 94025
- Paul W. Crapuchettas
396 Raymond Dr.
Redwood City, Ca 94061
- A. Fong
1328 Parkinson Ave
Palo Alto, Ca 94301
- Peter D. Lacy
930 Meadow Dr.
Palo Alto, Ca 94303
- S. E. Harris
880 Richardson Ct.
Palo Alto, Ca 94303
- Dean A. Watkins
Watkins-Johnson
3333 Hillview Ave.
Palo Alto, Ca 94304
- W. Culshaw
3251 Hanover St.
Bldg. 202 Dept. 52-40
Palo Alto, Ca 94304
- M. Chodorow
Stanford Univ. Microwave Lab
Stanford, Ca 94305
- Prof. Gordon S. Kino
Stanford Univ-Microwave
W W Hansen Labs-Stanford
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- D. J. Angelakos
U. of Cal. Cory Hall
Electronics Res. Lab.
Berkeley, Ca 94720
- R. F. Soohoo
568 Reed Drive
Davis, Ca 95616
- Robert W. Beatty
Natl. Bureau of Standards
Div. 272
Boulder, Co 80302
- H. V. Cottony
1051 10 St.
Boulder, Co 80302
- H. M. Altschuler
Natl. Bureau of Standards
Boulder, Co 80302
- Nathan Marchand
Marchand Elec. Labs.
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Greenwich, Ct 06830
- H. S. Jones, Jr.
6200 Sligo Mill Rd. N.
Washington, D.C. 20011
- G. Abraham
3107 Westover Dr., S. E.
Washington, D. C. 20020
- R. J. Adams
10114 Livingston R., S. E.
Washington, D. C. 20022
- S. T. Smith
U. S. Naval Res. Lab.
Code 5240
Washington, D. C. 20390
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- R. E. Henning
400 Ponce De Leon
Clearwater, Fl 33516
- Richard F. Filipowsky
P. O. Box 17474
Tampa, Fl 33612
- M. R. Donaldson
Box 11842
St. Petersburg, Fl 33733
- John E. Pippin
P. O. Box 80508
Atlanta, Ga 30341
- H Magnuski
605 Spring Road
Glenview Il 60025
- R. F. H. Yang
10021 W. 146 St.
Orland Pk., Il 60462
- R. Adler
6001 W. Dickens Ave.
Z R C
Chicago, Il 60639
- C. T. Sah
2207 Cottage Grove
Urbana, Il 61801
- Raj Mittra
Univ. of Illinois
Dept. of E. E.
Urbana, Il 61801
- Paul D. Coleman
710 Park Lane
Champaign, Il 61820
- G. A. Deschamps
920 W. Charles St.
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Leo Young at Microwave Symposium.

CALL FOR PAPERS

**1974 IEEE INTERNATIONAL
SOLID-STATE CIRCUITS
CONFERENCE**

Philadelphia Marriott Motor Hotel
February 13-15, 1974

Invites papers which have not been previously published or presented covering the design, performance, testing or application of solid-state circuits and systems.

Applications may be in a variety of fields, including computers, communications, medical, government, automotive, consumer and industrial electronics.

Areas of Interest Include, But are Not Restricted To:

- Integrated Electronics
- Circuit Techniques
- New Device Applications
- Optoelectronics
- Microwave Electronics
- Memories
- Medical Electronics
- Circuit Design and Testing

Paper should be suitable for a 20-minute presentation. Authors must submit both a 35-word abstract and a 300 to 500-word summary, preferably 15 copies of the latter, to facilitate screening by the program committee.

The summary, which will be used to select papers for presentation at the conference, will not be published. (Authors of accepted papers will be asked to prepare a final version for publication in the Conference DIGEST). The summary must describe clearly what new and significant results — both theoretical and experimental — have been obtained, and should include illustrations such as circuit diagrams, photographs, and performance curves where applicable.

Summaries must be submitted in single-side, double-spaced typewritten form suitable for reproduction and review purposes. Author's name, affiliation, complete return address and telephone contact should appear on the first page, with author's name and paper title on each subsequent page.

The 35-word abstract, suitable for publication in an advance program, should be typed on a separate sheet, and include title of talk, author's name, affiliation, complete return address and telephone number. Abstracts longer than 35 words will be shortened arbitrarily by the Program Committee.

North American authors should send abstract/summary to Program Committee Secretary:

G. A. Alphonse
RCA Corporation
Princeton, N.J. 08540

Deadline: Monday, October 1, 1973
Post-deadline Papers

A limited number of post-deadline papers (for 10-minute presentation) reflecting important new developments,

will be considered if 100-word abstracts and 300-500 word summaries with any pertinent illustrations, suitable for publication, are received by January 4, 1974.

Overseas authors should send abstract and summary to the following ISSCC74 European or Asian secretaries:

European

H. Ruchardt
Siemens AG, HB-ISTL
Balanstrasse 73
D-8 Munich 80, Germany

Asian

K. Kataoka
Nippon Tel/Tel. Research and Development Bureau,
Midoricho Musashino-shi Tokyo 180, Japan

Overseas paper deadline: September 15, 1973

**International Specialist Seminar on
"Component Performance and Systems
Applications of Surface Acoustic Wave
Devices"**

Performance and systems applications of state-of-the-art, surface acoustic wave devices are the major themes of the International Specialist Seminar to be held in Aviemore, Scotland from the 25th to 28th of September 1973. G-MTT and G-SU are cooperating sponsors of this meeting which is being organized by the British Institution of Engineers. Attendance to this Specialist Seminar will be limited to 100 in order to promote detailed discussions and to avoid parallel sessions.

The seminar will begin with a series of sessions devoted to the design and fabrication of SAW devices for use in frequency filters, discriminators, fixed and variable delay lines, amplifiers, oscillators, fixed and programmable analogue matched filters, correlators, waveguides, and integrated acoustic subsystems. Performance of SAW devices against competitive technologies, such as charge coupled devices, are to be highlighted.

Sessions concerned with systems applications will feature papers on radar pulse compression modules, tapped delay lines for clutter-reference pulse Doppler radars, frequency discrimination receivers, improved IFF systems, digital storage and decoding, critical components for digital communications, and new forms of burst spread spectrum modems applicable to both satellite ranging and high integrity communications for ATC.

Places are available to those who believe that they can make a contribution to this Specialist Seminar in one of the above areas or with new ideas in the field. Applicants should submit to the Seminar Organizing Committee an abstract of about 300 words describing the work in which they are engaged and which they think could usefully be contributed to the discussions. On the basis of the suitability of the work described, and on the availability of places, invitations to participate will be issued.

**1973 IEEE INTERNATIONAL
ELECTRON DEVICES MEETING**

December 3-5, 1973

Washington Hilton Hotel, Washington, D.C.

The Annual Technical Meeting of the Devices Group will emphasize new and significant aspects of research, development, design, and manufacture of electron devices.

Specific areas to be covered include:

- Device Technology
- Integrated Electronics
- Solid-State Devices
- Image Transducer and Optoelectric Devices
- Lasers and Quantum Electronic Devices
- Electron Tubes

The deadline for abstracts is August 17, 1973. Prospective authors must submit a comprehensive abstract, approximately 200 words long, appropriate to a 20-minute paper. The abstract must include the title, author(s), company affiliation, city and state of company location on one side of a double-spaced typewritten page.

Late news papers will be considered if 75-word abstracts for ten-minute papers are received by the Program Chairman before October 15, 1973.

Prof. Fredrik A. Lindholm
1973 IEDM Technical Program Chairman
Electrical Engineering Department
University of Florida
Gainesville, Fla. 32601

1973 IEEE ULTRASONICS SYMPOSIUM

The 1973 Ultrasonics Symposium will be held at the Naval Postgraduate School, Monterey, California on November 5-7, 1973.

A partial list of topics includes:

- Acousto-electric and Acousto-optic interactions
- Acoustic Imaging
- Biological and Medical Electronics
- Industrial Ultrasonics and Acoustic Emissions
- Materials and Physical Acoustics
- Surface Wave Devices and Applications

In order to present the most current work, the deadline is August 1, 1973. Abstracts should be sent to:

J. de Klerk
Westinghouse Research and
Development Center
Beulah Road
Pittsburgh, Pennsylvania 15235
Phone: (412) 256-3595

IEEE Members Note:

A special reduced membership fee of \$2.50 for the Sonics and Ultrasonics Group of the IEEE will be available at the Symposium.

**1974 CONFERENCE ON
PRECISION ELECTROMAGNETIC
MEASUREMENTS
July 1-5, 1974
London, England**

This will be the ninth conference in the biennial series which began in 1958 and is the first to take place outside the United States. Original papers in the following subject are invited:

- dc and lf measurements
- rf and microwave measurements
- Time and frequency
- Time domain measurements
- Measurements at millimetre and sub-millimetre wavelengths
- Laser measurements
- Automated and computer-controlled measurements

Contributions on the following areas of topical interest are also invited:

- The speed of light
- Electromagnetic measurements of length and position
- Measurements of dielectric materials
- Health and safety in radiation conditions
- rf interference and the electromagnetic environment
- Precision industrial measurements
- Management and economic factors in measurement
- International co-operation in the field of precision electromagnetic measurements

Papers should be submitted to:

The 1974 CPEM Secretariat
c/o The Conference Department
The Institution of Electrical Engineers
Savoy Place
London W. C. 2R OBL England

Abstracts must be submitted by 31 October 1973.

**SPECIAL ISSUE ON
MICROWAVE COMMUNICATIONS**

To keep the microwave engineer abreast of the phenomenal growth in the number and types of microwave communications systems used both in this country and abroad, papers are being sought for a special issue of the G/MTT Transactions scheduled for publication in the fourth quarter of 1974. This special issue will contain both invited and submitted papers covering new or proposed systems, or tutorials on existing systems.

Submitted papers should include a survey of the system requirements along with frequency allocations, radiated power, transmitter and receiver specifications, etc. Papers are invited on a variety of topics including systems and applications of devices in: telecommunications, CATV, satellite communications, LASER links, mobile communications, etc.

R. E. Fisher
Room 3F-205
Bell Telephone Laboratories
Whippany, New Jersey 07981

**1974 URSI SYMPOSIUM
ON ELECTROMAGNETIC
WAVE THEORY
August 9-12, 1974**

A Symposium on Electromagnetic Wave Theory, sponsored by the Union Radio-Scientifique Internationale (URSI), is being held in London at the invitation of the Royal Society and the Institution of Electrical Engineers, from 9-12 July 1974 at the Imperial College of Science and Technology. The theme will be the effective use of computer methods in electromagnetic wave theory; at least one full session will be devoted exclusively to this topic. A number of speakers will be invited to present reviews in this area.

The programme will cover, as in previous electromagnetic wave theory symposia, the areas of electromagnetic wave propagation and antennas. Special attention will be given to: propagation under the earth's surface; open resonators; propagation in multi-conductor systems; optical waveguides; and phased arrays.

While the programme is devoted to electromagnetic waves, it is also considered appropriate to include acoustic surface wave propagation because of its similarity to electromagnetic wave propagation.

Those wishing to offer contributions should submit abstracts of not more than 4 pages (including illustrations) to the Conference Department, Institution of Electrical Engineers, Savoy Place, London, England WC2R OBL by December 1973.

**TOPICAL MEETING ON
INTEGRATED OPTICS
January 21-23, 1974
Fairmount Roosevelt Hotel
New Orleans, La.**

A limited number of contributed papers, covering original, unpublished work on the conference subjects, will be accepted for presentation. Presentation time for contributed papers will be 20 minutes, with five additional minutes for discussion. Each author should submit a 25-word abstract suitable for the meeting program and a four-page summary of his paper. The summary of the paper is to be typed on 8½ x 11-inch white bond paper with one-inch margins all around. The four pages must include all text, equations, drawings, and references. Since this summary will be reproduced directly by photo offset, all equations, figures, and references must appear on the pages exactly as they are to be reproduced.

All abstracts must reach us before October 12, 1973. Mail them to:

Optical Society of America
Integrated Optics Meeting
2100 Pennsylvania Avenue, N.W.
Washington, D. C. 20037

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