Interview with Dr. Rao Bonda,
CPMT Society Vice President (Technical) …..

By Dr. Li Li , Associate Newsletter Editor

Editor: Tell us a little about yourself and your family

Rao Bonda: I was born and raised in India. After receiving my BS and MS in Metallurgical Engineering, I came to the US for a Ph.D. I have been married to my lovely wife Sowbha for over 25 years. We have two wonderful daughters; Swathi is in college majoring in business and Sirisha is in middle school.

Editor: Tell us how you got involved in the field of packaging and something about your career.

Rao Bonda: For my Ph.D. (Materials Science and Engineering) at the University of Pennsylvania, I researched the fundamental understanding of high temperature fatigue in nickel-base superalloys. I continued post-doctoral research on the mechanical properties and physical metallurgy of high-temperature alloys until I got an opportunity to apply my expertise in this area to solder fatigue at the IBM T.J. Watson Research Center in Yorktown Heights, NY. This was my first exposure to the exciting field of packaging and the electronics industry. After working on failure mechanisms of Pb/Sn solder alloys and C4 flip chip solder joints, I extended my packaging expertise to the development and qualification of ceramic and plastic packages at IBM Microelectronics Division in Endicott, NY. I joined Freescale Semiconductor (formally known as Motorola's Semiconductor Products Sector) in Tempe, AZ in 1994 as a team leader for the packaging of an optical display module. Since then, I have worked on a wide range of projects involving design, qualification and manufacturing implementation of plastic packages for wireless communication and networking systems applications.

Editor: What do you see as the needs of our members around the world and how is the CPMT Society addressing them?

Rao Bonda: Whether they are experts or just entering the field, career enhancement through technological innovation and interaction with the community in their field of interest are of primary importance to our members. I see an increasing pressure on the electronics packaging community to lower the backend assembly cost, and to achieve this without sacrificing package quality or performance. There is also emphasis on shorter cycle times for development of new packages and processes as well as for production ramp-up. To keep up with this ever changing industry and expectations, our members worldwide feel the need to be technically innovative and know the latest, significant developments in their field of interest. CPMT Society is providing the resources to meet these needs through publications, conferences, workshops, technical committees, education and local chapter activities. The Society ensures accessibility of these programs to all our members by periodic reviews and enhancement of the programs.

Editor: You have taken a new position in the Society as Technical VP starting this year. What are your plans for the Society within your area in short and long term?

Rao Bonda: First, I would like to thank the Society for giving me this important position to serve our members. As the Technical VP, I am responsible for providing the necessary support to our Technical Committees (TCs) so that our members get the highest benefit through TC activities. We currently have 18 Technical Committees that cover various CPMT fields of interest. The role of the TCs is to promote, review and report major developments in their areas. They organize symposia, workshops, and seminars, and arrange special sessions at CPMT-sponsored conferences. They develop tutorial courses in their technical fields and support editors of IEEE Transactions in publishing papers on the latest technologies.

In the short term, I want to make sure that the TCs have the resources they need to make their activities visible to our members. I also plan to form TCs in new and emerging technologies, such as, 3D Packaging and SiP/SoP. In the long term, I continue supporting the TCs for increased participation in conferences, publications and local CPMT chapter activities worldwide.

Editor: What would be your advice to engineers who are in or entering this field for career growth?

Rao Bonda: The fields encompassed by the CPMT Society are highly interdisciplinary and present tremendous opportunities to interact with engineers from different backgrounds. Whatever their formal education is in, engineers in this field invariably will have to deal with various aspects of packaging and work on diverse projects simultaneously. Therefore, adaptability and teamwork are extremely important. Often, the team includes customers and suppliers, as well as their colleagues, so personal skills are also essential. All these aspects make working in this field very interesting and challenging. It offers great prospects for career growth, but requires one to be very agile.

Editor: Where could the Society and you use help from members?

Rao Bonda: Members can help the Society by actively participating in its programs and utilizing that learning for their professional growth. This is essential to the growth of local chapters, conferences, Technical Committees, membership, and other programs, and to the growth of the Society as a whole. With respect to the Technical Committees, we need volunteers to join the TCs and support them actively. I also need input or ideas from members concerning the TCs.

Editor: What do you like to do in your spare time?

Rao Bonda: I like to spend my spare time with my family, exercising at a health club and watching Telugu (my native language) and Hindi movies. I also spend my spare time on other volunteer work for the CPMT Phoenix Chapter, IEEE Phoenix Section, ECTC and other professional and non-profit organizations in Phoenix area.

Editor: Thank you, Rao.

Dr. Rao Bonda and his family with Minnie Mouse at 2005 ECTC Gala Reception in Orlando, Florida

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Interview with Rolf Aschenbrenner,

CPMT Society Vice President (Conferences) ….

By Debendra Mallik, Associate Newsletter Editor

Editor: Tell us a little about yourself and your family.

Rolf Aschenbrenner: I grew up in Southern Germany and I moved to Berlin in 1993. Berlin is a very special city and a rapidly-developing metropolis and I really enjoy living in such an interesting place that has gone through so many big changes, such as the separation into East and West and the reunification after the fall of the Berlin Wall. I have been married since 1995 and I have two daughters at the age of 13 and 15 years which also appreciate to live in such a great place like Berlin.

Editor: Tell us how you got involved in the field of packaging and something about your career.

Rolf Aschenbrenner: I studied at the University of Applied Science in Gießen, Germany, and I received the B.S. degree in mechanical engineering in 1986 and the M.S. degree in physics from the University of Gießen in 1991. From 1991 to 1992 I worked at the University of Gießen in the area of new materials and was engaged in a project where I worked as a physicist preparing experiments for the German Space Lab Mission D2.

I got involved into packaging by chance. When I moved to Berlin I found a job at the Research Center for Microperipheric Technologies at the Technical University of Berlin where I got in contact with microelectronic packaging for the first time, working together with Prof. Reichl. In the beginning I worked in the area of electroless metal deposition. Since March 1994 I have been employed at the Fraunhofer Institute for Reliability and Microintegration Berlin (IZM) where I built up a team in the area of flip chip interconnects with adhesives. In 1997 I became head of the department of Chip Interconnection Technologies, which has more than 30 employees and is one of the biggest departments of the institute. In the meantime I also served as Deputy Director of the Fraunhofer Institute IZM and for this reason I was involved in various activities in Germany, on the level of the European Union as well as worldwide ones.

Editor: What do you see as the needs of our members around the world – what are the most important issues the CPMT Society can address?

Rolf Aschenbrenner: In my opinion one of the most important issues of the Society is networking. It is great to work together in a community of excellent experts and these contacts are very helpful to get to know other people worldwide. The exchange of knowledge and creative ideas also result to be very valuable and I would always encourage people to form part of this community.

Editor: What are your visions for the society in short and long term?

Rolf Aschenbrenner: I am supporter of the globalization and my main aim is to unite and enhance the activity of scientific and industrial colleagues that are working in the field of electronic packaging and manufacturing technology not only in Europe but also worldwide. In my opinion it is very important that the packaging community of Europe, Asia and America grows together.

Editor: What are your plans for the Society within Conferences and Workshops?

Rolf Aschenbrenner: My main goal as Vice President Conferences is to make the conferences sponsored by IEEE CPMT more attractive to the participants. In my opinion the existing conferences should be qualitatively improved – if necessary. Conferences with similar topics should be combined and it should be avoided that the number of conferences increases if there is no qualitative benefit from it. Another objective is to establish the ESTC as in important European conference. Furthermore I am working on pushing ahead the collaboration with IMAPS in Europe.

Editor: What would be your advice to engineers who are in or entering this field for career growth?

Rolf Aschenbrenner: I think the field of packaging is a very fascinating one, especially because of interdisciplinarity. Many different sectors are involved such as mechanical/chemical and electrical engineering. The fact that interdisciplinary collaboration breaks the limiting factors of the specialist fields facilitates and stimulates the development of creative ideas. But it also makes the ability to work in a team a necessary prerequisite for the professional career.

I would advise you professionals of this field to join the IEEE CPMT Society and use its very helpful networking potentials.

Editor: What's a good book you have read recently?

Rolf Aschenbrenner: The last book I have read is called "Der Schwarm" (an English translation would be "The Swarm") by a German author named Frank Schätzing. In his book Frank Schätzing stages the worldwide rebellion of nature against mankind. He sketches a global catastrophe scenario between Norway, Canada, Japan and Germany. The novel is full of psychological and political dramas and it is extremely exciting until the very last page. The book is a balancing act between popular scientific rep-

resentation and science fiction similar to Dan Brown's "Da Vinci Code".

Editor: What do you like to do in your spare time?

Rolf Aschenbrenner: In my job I have to travel a lot (to conferences, project meetings, road map meetings etc.). Since I really enjoy travelling all these trips around the globe do not cause stress to me. I would only wish that I had more time to see more of the interesting sights of the countries I visit.

When I am at home during the weekends I enjoy cooking for my family and friends. For me cooking is a challenge and when I travel I get a lot of ideas that I try to put in practice when I am at home. My favourite cuisines are the Asian and the Italian ones.

Editor: Thank you, Rolf.

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Interview with Dr. David W. Palmer,
CPMT Society Fellow …..

By Vasudeva P. Atluri, Newsletter Editor

Editor: Tell us a little about yourself and your family.

Dave Palmer: I have worked for a National Laboratory for more than 3 decades. Most of my contribution has been in building and packaging electronic components for harsh environments (low and high temperatures, shock, radiation). During this period I also lived in the same house with the same spouse raising 3 children who were strongly and strangely influenced by commercial electronics.

Editor: Tell us how you got involved in the field of packaging and something about your career.

Dave Palmer: In grad school while experimenting with low temperature electronics, the importance of designing packages for thermal management, high frequency transmission, and miniaturization became very clear. The fact that packaging was not at that time considered interesting in academia also made it appear as the forbidden fruit. Sandia Labs hired me immediately upon graduation to help their team design and build hybrid microcircuits rather than printed wiring boards. Being able to operate a wire bonder, do photolithography, and build thin film vacuum deposition chambers were not common student skills in the early 70s and were admired by hardware-delivering employers more than your grade in quantum mechanics.

Editor: What do you see as the needs of our members around the world – what are the most important issues the CPMT Society can address?

Dave Palmer: Basic member needs are fixed but the way CPMT and the world address these needs are changing. The first need is to gather information that will help our members complete their projects. The library stack search of my youth has given way to the Internet search of the IEEE data base. After learning from publications, our members next need to bounce their ideas/designs off of colleagues. CPMT activities give many opportunities to meet experts outside of your own company who can give candid feedback. This natural networking by volunteering in CPMT is often not understood by those that have not been active. A third need is for continued "formal" education. The Tin whisker Workshop, the Professional Development 4 - 8 hour classes, and the panel discussions at ECTC have been enormously helpful for many of the projects in my career. CPMT could expand their offering over the Internet of both technology tutorials and keynote addresses on the state of our industry. In fact, having a picture-filled dictionary of terms and abbreviations used in the packaging business would be great. At least once a month I run across a term that is not clear and have to scramble through many books and web sites to nail it down.

Editor: What are your visions for the society in 5 to 10 years?

Dave Palmer: The CPMT society has been re-defining itself continually for the 25 years I have volunteered. As newsletter editor for 22 years I saw the power of electronic delivery of edited meeting reviews, society volunteer news, and upcoming meeting announcements. It is very motivating to a hard-working conference volunteer to get their picture and written acknowledgment in a newsletter that goes to 4000 fellow members. The power of quick delivery in a colorful format make me expect that all our Society news will come exclusively over the Internet within 5 years. (I made the same prediction 5 years ago).

The CPMT Society has definitely tried to be more visible to the component and packaging community in the last 5 years. The Society has also grown more global during this period. The number of sponsored meetings and pages of publications have probably doubled in the last 10 years. It is probably impossible for one person to make all the CPMT-sponsored meetings around the world (why one would want to go to that many meetings is another mystery), or read all the published pages. We will probably develop the ability to provide members with streaming video of keynote and technical presentations at any of our meetings. A member may not be able to make the Hong Kong meeting but can still watch two of the presentations on a home computer. Even our biggest meeting (ECTC) only has about 20% of our members in attendance so "partial" attendance would be a nice step forward. We will also probably develop "condensation" experts. These experts will distill the many presentations and publications in quickly evolving areas so that a member can get up to speed in 10 minutes of study. Right now there is little professional recognition or career benefit for this specialty but the savings of time for our members will demand such a service.

Editor: What are your plans for the Society?

Dave Palmer: I intend to continue providing small input to each newsletter (cartoons, book reviews) and helping our annual quest to find Fellow Candidates. I have considered developing some electronic tutorials on component subjects and placing these on the Members-only web pages. However, I decided to let the next generation of engineers take over my traditional roles. As a rule of thumb, volunteer positions should not be assumed for more than 5 years. Many volunteers in each generation should have opportunities to perform the many Society tasks.

Editor: What would be your advice to engineers who are in or entering this field for career growth?

Dave Palmer: The best advice I received was from a past president of CPMT, Skip Porter. He called me up one day when I still was struggling finding a place at Sandia. He said there were many ways to help the Society. He gave me a list of openings and asked me to pick 2. I was most comfortable with newsletter editing and with Rules of Order. So I became editor and keeper of the Constitution. So find a list and pick at least one.

Once you are a real volunteer and not just an attendee, the opportunities to continue education and to publish will be obvious.

I'm afraid I am beyond help from our Society members. I am getting ready to retire and everyone in the Society, especially those that have retired from several employers, do not seem to know how to retire. In contrast, it is good to see that former president Rao Tummala has played some golf in many parts of the world after decades of packaging technology concentration. Most packaging and component engineers appear to successfully follow their main expertise forever. However, there are so many exciting paths to follow, as rewarding as CPMT has been for me, it is time to head off in other directions.

Editor: What's a good book you have read recently?

Dave Palmer: I love books, often haunting libraries and book stores. Recently I was amazed by a book about the artist Hieronymus Bosch. I am currently savoring "War with the Newts" by Karel Capek, the man the coined the term "robots".

Editor: What do you like to do in your spare time?

Dave Palmer: In the hundreds of hours I have saved by not editing the last few issues of the CPMT newsletter, I have had enough spare time to put a new roof on the family home. Civil engineering is hard work but has a very tangible final reward. Vegetable gardening is another hobby, one with very edible rewards.

Editor: Thank you, Dave.

The 56th ECTC
May 30th – June 2nd, 2006

The 56th Electronic Components and Technology Conference (ECTC) was held May 30 through June 2, 2006 at the Sheraton San Diego Hotel and Marina in San Diego, California. This premier international conference brings together the best in packaging, components, and microelectronic systems science, technology, and education. The ECTC is jointly sponsored by the IEEE Components, Packaging and Manufacturing Technology Society (CPMT) and the Electronic Components, Assemblies, and Materials Association (ECA), the electronic components sector of the Electronic Industries Alliance (EIA). ITHERM and ECTC are co-located in even-numbered years to provide attendees with even more opportunities for technical exchange and professional interaction.

The Executive and Program Committees of the 56th ECTC would like extend sincerest thanks to all the authors, presenters, instructors, session co-chairs, program committee members, exhibitors, and our conference and corporate sponsors for making the 56th ECTC so successful.

ECTC consists of three major parts: the technical program, the professional development courses, and the technical exhibit corner. Contributions from more than 20 countries made ECTC a truly global conference. Authors from companies, research institutes, and universities located around the world presented 314 papers at thirty-six oral sessions and two poster sessions to about 1,150 conference participants. Participants caught up with new technology developments and broadened their technical knowledge base in the sixteen professional development courses offered by world-class experts in their fields. The papers and courses covered a wide spectrum of topics, including electronic components, materials, processing, assembly, advanced packaging, system packaging, manufacturing, optoelectronics, interconnections, quality, reliability, modeling and simulation. Emerging technologies topics sessions addressed exciting new developments and applications in biotechnology and nanotechnology. The Technology Corner managed by Bill Moody helped seventy-four leading companies, primarily in the electronics components, materials, and packaging field, showcase their products and services to the engineers attending both ECTC and ITHERM conferences.

The technical program was complemented by three special evening sessions. William Chen, IEEE-CPMT Society President, chaired the panel discussion featuring industry leaders on "3D Packaging and Novel Interconnects." Torsten Wipiejewski, the ECTC Program Chair, chaired the plenary session entitled "Look into the Crystal Ball: Arising New Applications, Technologies and Challenges," which showcased leaders from the semiconductor industry presenting their views on the opportunities and challenges of today's global manufacturing environment." Yoshitaka Fukuoka from Weisti chaired a CPMT technical committee seminar highlighted leading edge developments in high density interconnect technology, "Advanced Substrate Technologies for SiP/SOP."

ECTC *3D Packaging and Novel Interconnects* Panel Speakers