LIST OF UNIVERSITIES INVOLVED WITH ACADEMIC STUDY AND RESEARCH PROJECTS IN BRAZING AND SOLDERING

(Status on February 2005)

Reviewed and updated by Alexander E. Shapiro, AWS C3 Committee of Brazing and Soldering,
Titanium Brazing, Inc., Columbus, OH (ashapiro4@hotmail.com)

Part 1. BRAZING

University	Personnel	Characterization
USA		
University of Illinois at Chicago, **Dept. of Civil and Materials Engineering** 842 W. Taylor Street, MC 246, Chicago, IL 60607	Prof. J. Ernesto Indacochea (jeindaco@uic.edu), Ph: (312)996-3428 Fax: (312)996-2426	Brazing of ceramics
Auburn University, **Materials Research and Education Center,** 201Ross Hall, Auburn, AL 36849 **Dept. of Materials Engineering** 204 Wilmor Labs, Auburn, AL 36849-5351	Prof. William F. Gale (wfgale@eng.auburn.edu), Dr. Daniel A. Butts (buttsda@eng.auburn.edu), Ph: (334)844-3366, Fax: (334)844-3400 T. Zhou, S.V. Orel, L.C. Parous, J.Y. Lui, S. Chen, T. Bao, W. Yu, R.H. Zee, B.A. Chin (bchin@eng.auburn.edu), Ph: (334)844-33226, Fax: (334)844-3400 D. Taarea (taaredr@eng.auburn.edu) Ph: (334)844-3406, Fax: (334)844-3400 R.V. Steward (gte311r@prism.gatech.edu) Ph: (404)894-2847	Brazing of titanium and TiAl alloys. Brazing of Nickel Aluminides. TLP brazing of intermetallic materials. Brazing and creep, thermal fatigue testing of Nb-1Zr alloy to stainless steel. Brazing of vanadium and C-C composites to stainless steel for fusion reactor application. Brazing of dispersion-strengthened copper. Brazing of nickel superalloys and ceramics. Brazing stainless steel to vanadium alloys.
North Carolina State University, **Dept. of Materials Science and Engineering** Raleigh, NC 27695	S.D. Wolter (sdwolter@unity.ncsu.edu) Ph: (919)515-7083 G.N. Yushin, F. Okuzumi, Z. Sitar	Brazing of silicon to polycrystalline diamonds
University of Cincinnati, **Dept. of Materials Science and Engineering** ML #12, Cincinnati, OH 45221-0012	Dr. R.Y. Lin, C.A. Blue, R.A. Blue J. Li, P. Deshpande, J. Seok, Y. Wang,	Brazing of TiAl alloys and titanium matrix composites. Infrared brazing.

	Raj N. Singh	Brazing of yttrium-stabilized ZrO2 ceramic to FeCrAlY alloy using Ag-CuO filler metal for solid oxide fuel cell devices
Carnegie Mellon University, **Dept. of Materials Science and Engineering** Pittsburgh, PA 15213	K. Barmak (katayun@andrew.cmu.edu) V.I. Dybkov (v@dybkov.kiev.ua)	Interaction of Fe-Cr alloys with Al melt
Massachusetts Institute of Technology, **Dept. of Materials Science** Cambridge, MA 02139	Prof. Thomas W. Eagar (TWEagar@mit.edu) Ph: (617)253- 3229 W.D. MacDonald, S.T. Buljan	Brazing of steel wide-gap joints by composite filler metals. Brazing of titanium alloys. TLP brazing. Abrasion-resistant active brazing filler metals
Lehigh University, **Dept. of Materials Science and Engineering** 5 E. Packer Ave., Bethlehem, PA 18015	W. Liu (wel2@lehigh.edu) Ph: (610)758-4270	Brazing of dissimilar nonocrystalline materials
Wright State University, **Dept. of Mechanical and Materials Engineering,** Dayton, Ohio 45435	P. Dadras (pdadras@delta.cs.wright.edu) , Ph: (513)873-5088, Fax: (513)873-5009 G.M. Mehrotra	Reaction brazing of C-C composites by synthesis of carbides or silicides in the joint. Ultra-heat resistant joints of graphite. Brazing of copper to beryllium by Al-12Si filler metal
Alfred University, NYSCC **Dept. of Ceramic Engineering and Materials Science,** 2 Pine Street, Alfred, NY 14802	Dr. A. Meier, D. Palit (debijanipalit@hotmail.com) Ph: (607)871-2274, Fax: (607)871-3047	Reactive brazing of copper to AlN ceramics
University of Kentucky, **College of Engineering, Center for Robotics and Manufacturing Systems** Lexington, KY 40506-0108 **Chemical and Materials Engineering Dept.** Lexington, KY 40506-0108	D.P. Sekulic (sekulicd@engr.ukv.edu) Ph: (859)257-2972 Fax: (859)257-1071 Prof. J.G. Morris	Brazing of aluminum structures. Brazing of aluminum in controlled atmospheres
Colorado School of Mines, **Center for Welding, Joining and Coating** **Dept. of Metallurgical & Materials Engineering** 1500 Illinois Street, Golden, CO 80401	Prof. Stephen Liu - Ph:(303)273-3796, J.J. Moore, C. Suryanarayana	Brazing of ceramics. Microwave and combustion synthesis brazing of diamond to WC tools.
University of California at Santa Barbara, **Materials Dept.** Santa Barbara, CA 93106-5050	D. R. Clarke Peter Maxwell Ph: (805)893-5930 Dr. Tony Evens Ph: (805)893-7839	Thetmodynamics and contact interaction of liquid metals with alumina ceramics
University of California, **Dept. of Materials Science and Engineering** Berkeley, CA 94720	M.R. Locatelli, R.A. Marks, D.R. Chapman, J.D. Sugar, R.M. Cannon, J.J. Kruzic,	Diffusion (TLP) brazing of structural ceramics.

	R.A. Marks, D.T. Danielson, A.M. Glaeser, (aglaeser@sapphire.berkeley.edu)	Hot strength and fatigue of alumina ceramics joints brazed with Cu/Nb/Cu interlayer
Tuskegee University, **Mechanical Engineering Dept.** Tuskegee, AL 36088	Y.X. Gan, H.A. Aglan (aglanh@acd.tusk.edu) Ph: (334)727-8973, Fax: (334)727-8090	Mechanical properties of vanadium/stainless steel brazed joints
Georgia Institute of Technology, **School of Materials Science and Engineering** Atlanta, Georgia 30332	R.V. Steward	Mechanical properties of vanadium/stainless steel brazed joints
University of Texas at El Paso, **Dept. of Metallurgical & Materials Engineering** El Paso, TX 19968	Prof. A. Bronson, Dr. C. Odegard	Reactive processing and brazing of ceramic-metal composites
University of Texas at Austin, **Balconies Research Center** Austin, TX 78712	Gilbert Stark Ph: (512)259-5652	
Rensselaer Polytechnic Institute, **Dept. of Materials Engineering, Materials Joining Laboratory** Troy, NY 12180	Prof. R.W.Messler Jr., L.E. Felton M. Jou, T.T. Orling L.W. Graham	Brazing of ceramics and intermetallics by self-propagating high-temperature synthsis (Combustion sysnthesis). Brazing of functionally-gradient joints
Harvard University, Cambridge, MA	W.J. Croft, W.J. Moberly-Chan	Brazing of CVD-coated ceramics by Ag-Cu-Ti-Al active filler metals
The Pennsylvania State University, **Powder Metallurgy Lab** University Park, PA	R.K. Enneti, K. Cowan, N.Myers, R.M. German	Evaluation of microstructure of WC-Co carbide joints brazed with Ni-based filler metals
Cleveland State University Cleveland, OH 44135	L.M. Cosgriff	Ultrasonic testing of brazed joints of 17-4PH stainless steel heat exchangers
University of Missouri-Rolla, **Ceramic Engineering Dept.** Rolla, MO 65409 **Dept. of Metallurgy** Rolla, MO 65401	W.G. Fahrenholtz J. Bao, J.W. Newkirk	Reactive brazing of alumina using Al interlayer. Wear-resistant WC coating by brazing
University of Wisconsin, **Dept. of Mechanical Engineering** Madison, WI	Prof. Xiaochun Li	Evaluation of brazing for joining fiber optic sensors
University of Virginia, **Dept. of Materials Science and Engineering** Charlottesville, VA 22904-4745	Gary J. Shiflet, V. Ponnambalam, S. Joseph Poon (sjp9x@virginia.edu) Mike Shelton Ph:(804)924-1485 David Sypeck Ph:(804)924-1487 Kennet D. Ervin Ph:(434)982-4783	Amorphous Fe-Mn-Cr-Mo-C-B-La alloys with liquidus in the range of 1120-1140^{o}C

Iowa State University, **Dept. of Aerospace Engineering and Mechanics** 222 M.D. Ames Laboratory, Ames, IA 50011	D.J. Sordelet, X.Y. Yang	Amorphous and mechanically-alloyed Zr-Ti-Nb-Cu-Ni-Al filler metals
Washington State University, **School of Mechanical and Materials Engineering** Pullman, WA 99164-2920	Jens Darsell	Brazing of alumina ceramics using heat-resistant Pd-Ag-CuO filler metal
University of Illinois at Urbana, **Materials Research Lab.** 104 South Goodwin, Urbana, IL 61801	Tony Banks Ph: (217)333-2133	
University of Rochester Rochester, NY	Paul Funkenbusch Ph: (716)275-4074	
University of South Carolina SC	Tony Reynolds Ph: (803)777-9548	
Pennsylvania State University, 118 Research West, University Park, PA 16802	Don Heaney Ph: (814)865-7346 Cell: (814)280-0627	
Worchester Polytechnic Institute, **Metal Processing Institute,** 100 Institute Rd., Worchester, MA 01609	Tim Doyle Ph: (508)831-5637	
Japan		
Osaka University, **Dept. of Welding and Production Engineering** 2-1Yamada-oka, Suita, Osaka 565, Japan **Joining and Welding Research Institute** 11-1 Mihogaoka, Ibaraki, Osaka 567-0047, Japan **Dept. of Manufacturing Science & Engineering** 2-1 Yamada-oka, Suita, Osaka 565-0871, Japan	K. F. Kobayashi, K. Uenishi, H. Sumi, Prof. Masaaki Naka (naka@jwri.osaka-u.ac.jp) Ph: +81-06-877-5111, Fax: +81-06-879-8689 Dr. N.F. Gao, Y. Miyamoto, Makoto Takahashi (makotot@jwri.osaka-u.ac.jp) Ph: +81-6-6879-8664**,** Fax: +81-6-6879-8689 K.Ikeuchi, K. Nishimoto, K. Saida (saida@mapse.eng.osaka-u.ac.jp) T. Kimata (kimata@mapse.eng.osaka-u.ac.jp) Fax: +6-6879-7570	OU has M.S. and graduation **academic programs** in brazing and soldering technologies. Brazing of TiAl alloys using self-propagating synthesis reactionor aluminum filler metal. Brazing of ceramics. Diffusion bonding of Ti_3SiC_2 intermetallic to Ti-6Al-4V alloy. Interfacial reaction in glass/metal joints in an electrostatic field. TLP brazing of Ni-superalloy single crystals. Brazing of aluminum in controlled atmospheres. Brazing of NiAl alloy to cast iron by hot pressing
Tokyo Institute of Technology, **Faculty of Engineering**	Prof. T. Onzawa Ph: +81-3-5734-2533	Brazing of titanium alloys.

2-12-1 Oho-Okayama, Meguro-ku, Tokyo 152-8852, Japan	A. Suzumura(suzumura@mep.titech.ac.jp) T. Yamazaki (yamazaki@postman.riken.go.jp) K. Takagami	Brazing of ceramics and diamonds with active filler metals. Brazing of titanium matrix composites reinforced with SiC fibers
Hokkaido University, **Division of Material Science and Engineering** Kita 13 Nishi 8, Kita-ku, Sapporo, Hokkaido 060-8628, Japan	M. Kudoh, K. Matsuura, T.Ohmi	Reactive brazing of stainless steel to NiAl. Brazing through synthesis of NiAl alloy to TiC-Ni and Al_2O_3-Ni cermets
Aoyamagakuin University, **College of Science and Technology** Tokyo, Japan	T. Osawa	Diffusion brazing of Al casting
Hiroshima University, **Graduate School of Engineering** Hiroshima, 739-8527, Japan **Dept. of Mechanical System Engineering** 2-313, Kagamiyama, Higashi-Hiroshima, 739-8527, Japan	S. Masumoto, A. Moshida, M. Yoshida, K. Shinozaki F. Yoshida, Xin Ma (maxin@vbl.hiroshima-u.ac.jp) Ph: +81-824-24-7540; +81-90-6419-3419 Fax: +81-824-24-7881	Brazing of aluminum to copper. Brazing of dissimilar base metals with Al-Si-Mg-Bi filler metal. Mechanical testing and solidification of aluminum joints brazed in controlled atmosphere
Okayama University of Science, **School of Science, Dept. of Applied Physics** 1-1 Ridai-cho, Okayama-City 700-0005, Japan	Dr. Y. Hiraoka (hiraoka@dap.ous.ac.jp) Ph: +81-86-256-9479, Fax: +81-86-256-9479 S. Yamamoto	Brazing of molybdenum to siliconized graphite with Pd-Ti and Pd-Si filler metals
Ehime University **Dept. of Mechanical Engineering** 3 Bunkyo-cho, Matsuyama, Ehime 790-8577, Japan	H. Toyota, T. Ide, H. Yagi	Wetting of graphite and C/C composites by molten metals
KINKI University, **Faculty of Engineering** 11-6 Kayanomori, Lizuka City, Fukuoka 820, Japan	Y. Fukaya, A. Ikuta, T. Ihara, M. Andou, T. Kobayashi	Brazing of graphite with active Ag-Cu-Ti and Ni-Cr-B filler metals
Tokai University, **Dept. Of Materials Science** 1117 Kitakaname, Hiratsuka-shi, Kanagawa-ken 259-1292, Japan	Dr. Y. Miyazawa (ceramics@keyaki.cc.u-tokai.ac.jp), Ph: +81-463-58-1211, Fax: +81-463-50-2096 Prof. T. Ariga Ph: +81-463-58-1211, K Denda, Y. Miyamoto	Brazing of titanium and stainless steel. Brazing of stainless steel using Ni-Cr-Si-P filler metal. Diffusion brazing of copper.
Tohoku University, **Institute for Materials Research** Sendai 980-8577, Japan **Dept. of Materials Processing** Sendai 980-8577, Japan **School of Mechanical Engineering, Lab. of Tribology**	N. Nomura (nnomura@imr.tohoku.ac.jp) Ph: +81-22-215-2118, Fax: +81-22-215-2116 K. Yoshimi, S. Hanada T. Suzuki, S. Nakatani F. Zhou (zhoufei18@hotmail.com)	Reactive brazing of molybdenum to Mo-ZrC composite. Brazing of Si_3N_4 ceramics using liquid-phase ceramic filler Y_2O_3-Al_2O_3-SiO_2-TiO_2.

Sendai 980-8579, Japan		ceramic filler Y_2O_3-Al_2O_3-SiO_2-TiO_2.
Nippon Dental College	R. Yoshida	Brazing of dental titanium alloys by silver filler metals
Tokyo Medical Dental University, **Faculty of Dentistry** Tokyo 113, Japan	K. Kuroda	Silver brazing of Ti-ni alloy to Co-Cr alloy wires
Fukui University, **Dept. of Mechanical Engineering** Fukui 910-8507, Japan	Prof. K. Takeshita, Y. Terakura	Brazing of titanium with Al filler metals. FEM modeling of tensile strength of brazed joints
Kumamoto University, **Dept. of Mechanical Engineering & Materials Science** 2-39-1 Kurokami, Kumamoto-shi 860-8555, Japan	Y. Morizono, M. Nishida, A. Chiba	Active brazing of AlN ceramics
The University of Tokyo, **Center of Nuclear Science and Technology** Ibaraki 319-1106, Japan	T. Iwai	Brazing of copper to 316L stainless steel for nuclear reactor devertor components.
Gunma University, **Faculty of Engineering** 1-5-1 Tenjin-cho, Kiryu 376-8515, Japan	S. Takayama, Y. Arikura, I. Shohji, T. Nakazawa, Y. Kawabata	Brazing of stainless steel heat exchangers with BNi-2. Brazing of molybdenum heater by Au-18Ni (Bau-4) filler metal
Iwate University, **Faculty of Engineering, Superconductivity Research Laboratory** 4-3-5 Ueda, Morioka 020-8551, Japan	T. Kaneko (kaneko@istec.or.jp) , Ph: +81-19-635-9015, Fax: +81-19-635-9017 A. Murakami, K. Katagiri	Brazing and mechanical testing of ceramic YBCuO blocks using ceramic Er-Ba-Cu-O filler
Nichon University, **Dept. of Aerospace Engineering** Chiba 274, Japan	H. Izui, Y. Suezawa	Mechanical testing of brazed joints of Inconel 600 made with Pd-Ni-Co-B/Cu filler metals
Toyama National College of Technology	S. Urai	Brazingof ceramics with Cu-Sn-Ti and Cu-Zn-Ti active filler metals
Niigata University, **Dept. of Mechanical Engineering** 8050 Ikarashi 2 Nocho, Niigata 950-2181, Japan	Takehiko Watanabe (twatanab@eng.niigata-u.ac.jp) Harytaka Adachi, Shiko Komatu, Atsushi Yanagisawa, Shizuyo Konuma	Halogen surface treatment of magnesium alloys for brazing. Fluxes for brazing magnesium alloys
Kyushu Institute of Technology, **Dept. of Materials Science and Engineering** Kitakyushu 804-8550, Japan **Research Incstitute for Applied Mechanics** Fukuoka 816-8580, Japan	K. Nishio T. Muroga	Diffusion brazing of molybdenum to titanium. Brazing of copper to 316L stainless steel for nuclear reactor devertor components.
Kyoto University, **Graduate School of Energy Science**	S.J. Son (sjson@iae.kyoto-u.ac.jp) Ph: +81-774-38-3465, Fax:+81-774-38-3467	Brazing of tungsten to SiC plasma-facing components.

Gokasho Uji, Kyoto 611-0011, Japan **Reactor Research Incstitute** Kumatori-cho, Sennan-gun, Osaka, 590-0494, Japan	K.H. Park, A. Kohyama Q. Xu (xu@rri.kyoto-u.ac.jp) Ph: +81-724-51-2417, Fax:+81-724-51-2620 T. Yoshiie	Brazing of copper to 316L stainless steel for nuclear reactor devertor components.
Osaka Prefecture University, **Dept. of Metallurgy and Materials Science** 1-1 Gakuen-cho, Sakai, Osaka 599-8531, Japan	A. Ikenaga	Brazing of NiAl alloy to cast iron by hot pressing
Russia		
Moscow State Aviation Technological University (MATI), **Dept. of Welding and Brazing of Aerospace Materials** Orshanskaya 3, Moscow 121552, Russia Ph: (095)141-1940, Fax: (095)141-1950 intdep@mati.edu.ru	Prof. Yuri S. Dolgov, Prof. Vadim A. Frolov Ph: +7-095-141-9454 Dr. Nikolai S. Pronin	MATI has B.S., M.S., and graduation **academic programs** in brazing/soldering technology and prepares brazing engineers for Aerospace, Automotive, and Energy industries. The scientific interests are in brazing aluminum, titanium and nickel alloys, ceramics, and composites; light-beam brazing; silver-free filler metals for joining copper and steels. My Alma Mater.
Moscow Engineering Physics Institute Kashirskoe Shosse. 31, Moscow 115409, Russia	Prof. Boris A. Kalin (kalin@phm.mephi.ru) Ph: +7-095-324-3165 Dr. Oleg N. Sevrjukov (sevrjukov@phm.mephi.ru) Ph: +7-095-323-9268, Dr.V.T. Fedotov, A.E. Grigoriev, A.N. Pliushev, L.A. Skuratov, V.I. Polsky, V.L. Yakushin	Manufacturer of Ti-based, Zr-based, and Ni-based amorphous filler metals for brazing titanium alloys, superalloys, and ceramics. Brazing of graphite and refractory metals for nuclear reactor applications
Toliatti State University, **Dept. of Brazing and Soldering** Belorusskaya Str. 14, Toliatti, Samara region 445667, Russia	Prof. Alexander Y. Krasnopevtsev Ph: +7-8482-296-671, (A.Krasnopevtsev@tltsu.ru) Prof. Boris N. Perevesentsev (B.Perevezentsev@tltsu.ru) Ph: +7-8482 -296-671, Fax: +7-8482 -229-522	The University has B.S., M.S., and graduation **academic programs** in brazing and soldering technologies and prepares engineers mostly for Automotive industry. The scientific interests are in brazing steels in reducing atmospheres, vacuum brazing of titanium alloys, soldering of electric systems.
Moscow State Metallurgical Institute, **Dept. of Welding Engineering**	Prof. Alexander P. Ternovsky Ph: +7-095-267-4107, Fax: +7-095-261-6848	The MMI has B.S. and M.S. **academic programs** in brazing and soldering

Lefortovskyi val 26, Moscow 111250, Russia	Prof. Yuri I. Bereznikov, Ph: +7-095-329-0021 Dr. Tamara V. Samsonova Ph: +7-095-267-4107	technologies. The scientific interests are in brazing and soldering of aluminum and titanium alloys, diffusion joining
Moscow State Engineering Institute of Civil Aviation, **Dept. of Aircrafts Repair** Moscow, Russia	Prof. Victor P. Frolov Ph: +7-095-459-0752	The MSEI-CA has M.S. and graduation **academic programs** in brazing and soldering technologies. The scientific interests are in brazing and soldering of materials used in Aircraft Industry, brazing for repair, automatization of brazing processes. Prof. V.P. Frolov is the Chairman of Russian Brazing/Soldering Committee
Kabardino-Balkaria State University,	Prof. A.A. Ahkubekov, B.Z. Kanchukoev	The K-BSU has M.S. and graduation **academic programs** in brazing and soldering. The scientific interests are in wettability, physical-chemical effects in brazing and soldering, thermodynamics
Moscow State Technical University im. Bauman (MVTU), Dept. of Welding Engineering Moscow 107005, Russia	Prof. Oleg I. Steklov Dr. Valeryi M. Nerovny	Corrosion of brazed joints. Arc brazing of cemented carbides and cermets to superalloys
Ural State Technical University Ekaterinburg, Russia	L.A. Zhukova, A.A. Zhukov, O.P. Solntseva, L.P. Golovushkina	Structure formation of metal eutectic melts
Ukraine		
The E.O. Paton Electric Welding Institute, **Dept. of Physical-Chemical Processes of Brazing and Soldering** 11 Bozhenko St., Kiev, 03680, Ukraine	Prof. Victor F. Khorunov Ph/Fax: +380-044-227-2677, khorunov@paton.kiev.ua, Dr. S.V.Maksymova Ph: +380-044-227-1434, Fax: +380-044-227-2677 maksymova@paton.kiev.ua, O.M. Sabadash Ph: +380-044-227-4658, Fax: +380-044-227-2677	The Paton Institute has graduation **academic programs** in brazing and soldering. The scientific interests are in brazing of : Ni(Co)-base superalloys, including repair brazing, intermetallics such as TiAl and NiTi, refractory metals and graphite for nuclear applications, oxide-dispersion strengthened Cu-alloys, titanium heat exchangers and pipes, metal matrix composites, honeycomb structures for rockets, cutting tools, dissimilar metals, and fluxes for brazing aluminum.

		Manufacturer of rotary vacuum furnaces for brazing.
Ukraine State Shipbuilding University Nikolaev, Ukraine	Prof. Victor F. Kvasnitskiy Ph: +380-0512-35-5389 or 0512-39-7318 Fax: +380-0512-39-7326 Dr. A.M. Kostin, Dr. B.B. Kvasnitskiy, A.N. Vorobiev	The USNU has B.S., M.S. and graduation **academic programs** in brazing technologies and prepares brazing engineers mostly for Navy and Shipbuilding industry. The scientific interests are in brazing of Ni-Cr- and Co-Cr-based superalloys and stainless steels, and properties of heat-resistant brazed joints.
Mogilev State Technical University Mogilev, Ukraine	Dr. Y.A. Tsumarev, I.V. Tarasenko	Fatigue testing of brazed joints
National University im. Mechnikov, Odessa, Ukraine	A.M. Diachenko, I.M. Mikhailovsky	Surface tension at the crystal/melt interface
Canada		
Universite du Quebec a Chicoutimi, 555 Boulevard de l'Universite, Chicoutimi, Quebec G7H 2B1, Canada	M. Bouchard, H. Liu	Wettability of C-C and metal matrix composites with Al and Al-Si filler metals
McGill University, **Dept. of Metals and Materials Engineering** 3610 University St., Montreal, Quebec, Canada H3A 2B2	Prof. Robin A. Drew (robin.drew@mcgill.ca) Ph: (514)-398-1773, Fax: (514)398-4492 M. Brochu , F. Edelman	TLP brazing of silicon nitride to iron aluminide. Wetting of Iron Aluminide alloys. Brazing of 347 stainless steel using Ni-36Pd-10Cr3B-0.6Si filler metal.
Carleton University, **Dept. of Mechanical and Aerospace Engineering** Ottawa, Ontario, Canada	X. Huang	Diffusion brazing of titanium honeycomb structures
Concordia University, **Dept. of Mechanical Engineering** 1455 Blvd. De Maisonneuve West, Montreal, Quebec, Canada H3G 1M8	M. Pugh	Wetting of Iron Aluminide alloy. Melting of Cu-coated titanium powder
University of Waterloo, **Dept. of Mechanical Engineering** 200 University Avenue W., Waterloo, Ontario, Canada N2L 3G1	Michael L. Kuntz (mlkuntz@uwaterloo.ca) Ph: (519)888-4567 ex. 6167 S.F. Corbin	Diffusion (TLP) brazing. Melting of Cu-coated titanium powder
University of Toronto, **Dept. of Metallurgy and Materials Science** College St., Wallberg Bldg., Toronto, ON, Canada , M5S 1A4	Prof. Thomas H. North Ph: (416)978-3012 Y. Zhai	Diffusion (TLP) brazing of alumina ceramics to metal matrix composites
University of Manitoba,	N.L. Richards, Q. Xu,	Diffusion brazing of titanium honeycomb

Dept. of Mechanical and Industrial Engineering Winnipeg, Manitoba R3T 5V6, Canada	M.C. Chaturvedi (mchat@cc.umanitoba.ca) N. Goel, O.A. Ojo	structures. Diffusion brazing of TiAl. Diffusion brazing of cast Inconel 738
Germany		
Aachen University of Technology, **Materials Science Institute** Templergraben 55, Aachen, D-52062, Germany or Juelicher Strasse 344a, Aachen, D-52070, Germany **Welding and Joining Institute** Pontstrasse 49, Aachen 52062, Germany	Prof. Eric Lugscheider (lugscheider@msiww.rwth-aachen.de) Ph: +49-241-166020 Fax: +49-241-1660217 U. Broich, M. Aulerich S. Ferrara (ferrara@msiww.rwth-aachen.de) H. Janssen, A. Reimann, B. Wildpanner, G. Kortenbruck, K. Scheer, U. Dilthey, F. Hoeker	The Aachen University has B.S., M.S., and graduation **academic programs** in brazing and soldering technologies. The scientific interests are in brazing of advanced metals, cermets, and ceramics, laser brazing, wide-gap brazing, etc. Arc (GMA) brazing
Chemnitz University of Technology, **Institute of Composite Materials** Chemnitz, D-09107, Germany	Prof. Bernhard Wielage (bernhard.wielage@mb.tu-chemnitz.de) Ph.:+49-371-531-6169 Fax: +49-371-531-6179 Silke Muecklich (silke.muecklich@mb.tu-chemnitz.de), Ph: +49-371-531-5384 Fax: +49-371-531-6179 Ina Hoyer Ph: +49-371-531-5232 Fax: +49-371-531-6179 (ina.hoyer@mb.tu-chemnitz.de) Thomas Grund Ph: +49-371-531-5356 Fax: +49-371-531-6179 (thomas.grund@mb.tu-chemnitz.de)	The University has M.S., and graduation **academic programs** in soldering and brazing technology. Scientific interests are in brazing of advanced structural materials: TiAl, composites, ceramics, etc. Corrosion resistance of steel to ceramic brazed joints Fluxless soldering and brazing of magnesium alloys and mixed joints with Zn-Mg-Al filler materials Brazing of titanium alloys including TiAl alloys Furnace brazing of aluminum alloys with Al-Zn filler metals Fe-based high temperature filler materials
Chemnitz University of Technology, **Dept. of Materials Science** Reichenhainer Strasse 70, Chemnitz 09126, Germany	Heiko Lang(heiko.lang@mbv.tu-chemnitz.de) Ph: +49-0-371-531-3295, Fax: +49-0-371-531-2441	Brazing of aluminum foams for heat exchangers.

Dortmund University, Baroper Strasse 301, Dortmund 44227, Germany	Prof. H.-D. Steffens Ph: +49-231-755-2446 D. Ashoff, J. Wilden, Dr. W. Tillmann, A.M. Osmanda	The University has M.S., and graduation **academic programs** in brazing technology. Scientific interests are in strength and fracture of brazed joints, brazing of advanced metals and ceramics. Brazing of CVD diamond films. Brazing of titanium alloys.
Westsaechsischen University Zwickau, Germany	Prof. Holger Klose	Composite filler metals for brazing ceramics. Ceramic to steel brazing using active filler metals. Corrosion resistance of joints
Technical University of Clausthal, **Institute of Metallurgy** Robert Koch st. 42, Clausthal-Zellerfeld, D-38678, Germany	Prof. Schmid-Fetzer, Dr. T. Studnitzky	Diffusion brazing (TLP process) of refractory metals
University of Hannover, **Institute of Materials Science** Appelstrasse 11A, Hannover 30167, Germany	Prof. F.W. Bach, E. Doege, I. Kutlu, A. Huskic (huskic@ifum.uni-hannover.de) T.A. Deisser (deisser@fortis-witten.de) Dr. K. Mohwald, Dr. U. Hollander	Brazing of ceramic inserts in forging dies. Active brazing of ceramics to cemented carbides. Brazing with thermal spraying. Brazing of titanium alloys.
University of Stuttgart, **Research Powder Metallurgical Laboratory** Heisenbergstrasse 3, Stuttgart 70569, Germany	Dr. H. Naefe Ph: +49-711-689-3113 Fax: +49-711-689-3131 (naefe@mf.mpg.de)	Glass brazing of ZrO_2 ceramic with metals
Technische Universitat Ilmenau, Ilmenau, Germany	J. Wilden, J.P. Bergmann	Laser brazing of zinc-coated steel.
Technische Universitat Darmstadt, **FG Physikalische Metallkunde** Petersenstrasse 23, Darmstadt 64287, Germany	Prof. J. Eckert	Amorphous and mechanically-alloyed Zr-Ti-Nb-Cu-Ni-Al filler metals
United Kingdom		
The University of Nottingham, **Dept. of Materials Engineering and Materials Design,** University Park, Nottingham, UK	P.H. Bond J.G.P. Binner (jon.binner@nottingham.ac.uk)	Brazing in turbine applications. Microvave brazing of SiC to zirconia
University of Cambridge, **Dept. of Materials Science and Metallurgy** Pembroke St., Cambridge, UK, CB2 3QZ	D.R. Ormston, K.M. Knowles, D.B. Conquest, A.T. Van Helvoort	Active brazing of ceramics
Brunel University	J. Li, P. Xiao (ping.xiao@brunel.ac.uk)	Brazing of heat-resistant ceramic joints.

Dept. of Materials Engineering Uxbridge, UK, UB8 3PH **Dept. of Design, Faculty of Technology** Runnymede, Surrey, UK	T.I. Khan	TLP brazing of superalloys and stainless steels
University of Manchester, **Materials Science Center** Grosvenor Street, Manchester, UK, M1 7HS	B. Derby (brian.derby@umist.ac.uk)	Interface reactions between Ti-doped tin and alumina
University of Sheffield, **Dept. of Engineering Materials** Sheffield, UK, S1 3JD	H. Johnes (k.a.burton@aheffield.ac.uk)	Wettability of aluminum nitride AlN by Ag-Cu-Ti active brazing filler metals
Australia		
University of Sydney. **School of Aerospace, Mechanical and Mechatronic Engineering, Center of Advanced Materials Technology** Sydney, NSW 2006, Australia	X.P. Zhang (xzhang@aeromech.usyd.edu.au) Ph: +61-2-935-17146, Fax: +61-2-935-17060	Dissolution of base metals in liquid brazing filler metal
Danmark		
The Technical University of Denmark, **Dept. of Metallurgy,** Lingby, DK 2800, Denmark **Dept. of Manufacturing Engineering** DTU-Building 425, Lingby, DK 2800, Denmark	K.A. Thorsen P. Henningsen (ph@ipl.dtu.dk) Ph: +45-4-525-4618	Brazing of cemented carbides.
Sweden		
Jonkoping University, **School of Engineering** Box 1026-551, 11 Jonkoping, Sweden	L. Ljungberg	Brazing of graphite with active Ag-Cu-Ti filler metals
University of Scoevde, **Dept. of Engineering Science,** SE-54128, Sweden	L.Y. Ljungberg	Wetting and brazing of alumina ceramics with active Ag-Cu-Ti filler metals
Norway		
The Norwegian Institute of Technology, **Dept. of Metallurgy** Trondheim, Norway	B. Bjorneklett, O. Grong	Brazing of dispersion-strengthened aluminum alloys

Netherlands		
Delft University of Technology, **Dept. of Materials Science and Technology** Rotterdamseweg 137, 2628 Al Delft, The Netherlands	J. H. de Wit	Corrosion of aluminum brazing alloys
France		
Universite de Champagne-Ardennes, Reims, France	A. Lodini	Brazing of C-C composites to molybdenum for cooling system of fusion nuclear reactor
Universite Joseph Fourier, **Institute National Polytechnique de Grenoble** 1130 rue de la Piscine, 38402 Saint-Martin-d'Heres, Cedex, France 101 rue de la Physique, BP 46, 38402 Saint-Martin-d'Heres, Cedex, France	O. Dezellus, M. Jeymond, N. Eustathopoulos (nikos@ltpcm.inpg.fr), R. Voytovych, Dr. F. Saint-Antonin (antonin@charteuse.cea.fr) Ph: +33-76-885477, Fax: +33-76-889463 V. Ghetta, F. Hodaj, P. Meneses, L. Courdurier, M. Suery (michel.suery@gpm2.inpg.fr) Ph: +33-47-6826342, Fax: +33-4-7-6826382	Wetting, reaction and brazing of graphite and ceramics with active Ag-Cu-Ti filler metals. Al-Ge-based rheocast brazing filler metals. Interfacial reaction and wetting in Pd-Mg/Al_2O_3 system. Brazing of plasma facing components with Al-Ge filler metals in semisolid state
Faculte de Pharmacie, **Laboratoire de Chemie Physique Minerale, EA. 401** Paris XI, 5 rue J.B.Clement, Chatenay-Malabry 92296, France	E. Dichi (dichi@mailhost.pop.u-psud.fr) Fax: +33-1-46-835454 B. Legendre	Phase composition in Sn-Cd-In alloys
Israel		
Technion University, **Israel Institute of Metals** Technion City, Haifa 32000, Israel **Dept. of Materials Engineering** Technion City, Haifa 32000, Israel	Dr. Olga Botstein (botstein@tx.technion.ac.il) Ph: +972-4-823-5104 G. Levi, W.D. Kaplan (kaplan@tx.technion.ac.il) E. Rabkin	Brazing of titanium and magnesium alloys. Titanium heat exchangers. Thermodynamics and contact interaction of liquid metals with alumina ceramics. Liquid metal penetration in metallic polycrystals, liquid metal embrittlenes
Ben-Gurion University of Negev, **Dept. of Materials Engineering** P.O. Box 653, Beer-Sheva, Israel	Dr. Natalya Froumin (nfrum@gbumail.bgu.ac.il), Ph: +972-8-647-2490, Fax: +972-8-647-7148	Wetting and reaction of active filler metals Ag-Cu-Ti on AlN ceramics
China		
Harbin University of Science and Technology, **Dept. of Mechanical Engineering**	Feng-Lian Sun (sfl@public.hr.hl.cn)	Brazing of CVD diamond thick film and graphite using Ag-Cu-Ti filler metals

Harbin 150080, People Rep. China **College of Materials Science and Engineering** Harbin 150040, People Rep. China	T. Zhao, M. Zhao, D. Li	graphite using Ag-Cu-Ti filler metals.
Harbin Institute of Technology, **National Lab. of Advanced Welding Technology** Harbin 150001, People Rep. China	Prof. Ji-Cai Feng (fengjc@hope.hit.edu.cn) , H. J. Liu (liuhj@hope.hit.edu.cn) Dr. J. Zhang (jiezhang606@hotmail.com), Prof. H-Y. Fang, Dr. Y. Zhou, Z.R. Li, J. Cao, J. Yang, J. Wu, Prof. Y.Y. Qian (qianyiyu@hope.hit.edu.cn), F. Gao (gaoli@yahoo.con.cn), Ph: +86-451-864-12974 P. He (hepeng@hope.hit.edu.cn) Ph: +86-451-864-12114, Fax: +86-451-862-21048 L. Zhuoran (lizr@hope.hit.edu.cn) Li-xia Zhang (zhanglxia@hit.edu.cn) Y.L. Li, Bao-you Zhang, Xian-meng Jing	Brazing of TiC cermets to iron with Ti-Zr-Cu-Ni and Ag-Cu-Zn filler metals. Brazing of TiAl alloys to steel, SiC ceramics, and to TiB_2 cermets. Brazing of alumina and Si_3N_4 ceramics with active Cu-Zn-Ti filler metals. Mechanical testing of aluminum brazed joints Diffusion brazing of TiAl alloy to steel using Ti/V/Cu composite filler metal. Brazing of TiC ceramic with iron alloys. Brazing of Ti_3Al using Ni-Cr-Si-B filler metals. Induction brazing of TiAl alloy to 40Cr steel using Ag-Cu-Ni-Li filler metal
Tsinghua University, **Dept. of Materials Science and Engineering** Beijing 100084, People Rep. China **Dept. of Mechanical Engineering** Beijing 100084, People Rep. China	Prof. Xu Xiangyang Ph: +86-10-6-277-3253 Prof. Gui-sheng Zou Ph: +86-10-627-94670 (zougsh@tsinghua.edu.cn) H.L. Ning, Z.T. Geng, J.S. Ma, F.X. Huang, Z.D. Han, J.G. Cui, Z. Qian, F. Huang, Jun Yang, Deku Zhang, Ai-ping Wu (wuaip@tsinghua.edu.cn) Ph: +86-10-6-277-3859, Genmao Liu, Jia-lie Ren, Wen-qing Zhao,	Brazing of alumina ceramic. Coating with cemented carbides and CoCrW cermets by infiltration with brazing filler metal BNi-2. Brazing of sapphire to hot-pressed Al_2O_3 using Ag-Cu-Ti active filler metal. Brazing if Si_3N_4 using TiN-modified active Ag-Cu-Ti filler metal. Diffusion brazing of Si_3N_4 using Ti/Ni/Ti and Al/Ti/Al interlayers
Beijing University of Aeronautics and Astronautics, **School of Mechanical Engineering and Automation,** Beijing 100083, People Rep. China **School of Materials Science and Engineering** Beijing 100083, People Rep. China	Fan Kun, Kang Hui, Ou Ping, Zhu Ying, W.-Q. Qu, H.-S. Zhuang, Y.-H. Zhang, Q.-P. Zhong, X.-H. Li, C.-X. Cao	Brazing of TiAl alloys. TLP brazing of Al/SiC composites with aluminum alloys. Wide-gap brazing of superalloys
Nanjing University of Aeronautics and Astronautics, **College of Materials Science and Technology**	S.-B. Xue (Xuesb@nuaa.edu.cn) W.-H. Chen, H.H. Su (shh@nuaa.edu.cn)	Flux ($CsF-AlF_3$) brazing of aluminum alloys.

Nanjing 210016, People Rep. China **College of Mechanical and Electrical Engineering** Nanjing 210016, People Rep. China	B. Xiao (xbxiao@263.net), H.J.Xu (xuhj99@163.net), Y.C. Fu (yucanfu@nuaa.edu.cn), J.H. Xu (jhxu@nuaa.edu.cn) W.F. Ding, J.B. Lu	Brazing of Ni-Cr alloys with diamond. Brazing of cBN grinding wheels using Ag-Cu-Ti filler metal. Brazing diamond-core drills
East China Shipbuilding Institute, **Dept. of Materials and Environment,** Zhenjiang, Jiangsu 212003, People Rep. China	R. F. Li, F.M. Zhou, M.F. Wu, K. Qi, Z.S. Yu (zhishui_yu@hotmail.com), Zou Jia-sheng (zjzoujs@public.zj.js.cn), Xu Ru-qiang, Zhao Qi-zhang, C. Zheng, Prof. Y. Zhishui	Reactive brazing of titanium. Brazing of SiC/Al composite with Al-Cu-Si-Mg filler metal. Arc brazing of titanium alloys with Ti-Cu-Zr filler metal. Arc brazing of galvanized steel using Cu-3Si filler metal
Beijing Technology and Business University **College of Mechanical Engineering and Automation** Beijing 100037, People Rep. China	C.-M. Wang	Wetting and reaction of graphite with Al and Ti alloys
Beijing Polytechnic University, **School of Materials Science and Engineering** Beijing 100022, People Rep. China	Y.W. Shi	Dissolution of base metals in liquid brazing filler metals (modeling)
Shanghai Jiaotong University, Shanghai 200030, People Rep. China	X.Q. Lu, Z.X. Shi, Y.X. Wu	Brazing of aluminum to stainless steel through Ni/Cu transitional film
Xi'an Jiaotong University, **State Key Laboratory for Mechanical Behavior of Materials,** Xi'an 710049, People Rep. China	Prof. G. Zhang (gfzhang@mail.xjtu.edu.cn) Ph: +86-029-826-68608 J. Zhang, Y. Pei, J. Niu Meng Weiru (mengweiru@xaut.edu.cn) Ph: +86-29-826-63126 Xu Kewei, Nan Junma, He Lin	Diffusion brazing of steels with BNi-2. Brazing of monolayer diamond tool using Cu-Sn-Ni-Ti filler metal
China Academy of Engineering Physics Mianyang 621900, People Rep. China	P. Dong (ptung888@126.com)	Laser brazing of beryllium
Liaoning Technical University, **College of Mechanical Engineering** Fuxin 123000, People Rep. China	S.-Y. Zi, L. Bai, Z.-C. Li	Flux brazing of copper and brass
Southwest Jiaotong University Chengdu 610031, People Rep. China	Z.-G. Zhou	Coating with cemented carbides and CoCrW cermets by infiltration with brazing filler metal BNi-2
Shandong Institute of Light Industry, **Dept. of Inorganic Materials** Jinan 250100, People Rep. China **Key Lab of Liquid Structure of Materials** Jinan 250061, People Rep. China	B.-R. Zhang L. Yajiang (yajli@jn-public.sd.cninfo.net) Ph: +86-531-856-4507,	Reaction brazing of $Si_3N_4/MoSi_2$ and Si_3N_4/WSi_2 composites. Brazing of WC-TiC-Co cemented carbides

School of Mechanical Engineering Jinan 250061, People Rep. China	Fax: +86-531-856-5051 Z. Zengda, F. Tao, W. Xinghong S.S. Zhang (shshzhang@sdu.edu.cn), Y.H. Cheng (yhcheng@163.net), L. Cheng (cheng@sdu.edu.cn)	using Cu-Zn-Ni filler metals Vacuum brazing of stainless steel heat exchangers using pure Cu filler metal
Jilin University of Technology, **Dept. of Materials Science and Engineering** Changchun City, 130025, People Rep. China **Key Laboratory of Automobile Materials** Changchun City, 130025, People Rep. China	C.G. Wang, H.P. Xiong, Z.F. Zhou Prof. W.H. Liu (lwh2028@sina.com.cn) Ph: +86-431-570-5305 D.Q. Sun, S.S. Jia, X.M. Qui	Brazing of ceramics to steel using amorphous Cu-Ni-Ti-B filler metal. TLP brazing of aluminum matrix composites
Jiangsu University, **School of Materials Science and Engineering** Zhenjiang 212013, People Rep. China	K. Chen	Brazing of Si_3N_4 ceramics using liquid-phase ceramic filler Y_2O_3-Al_2O_3-SiO_2-TiO_2
Yanshan University, **College of Materials Science and Technology** Qinhuangdao, People Rep. China	Y.H. Wang, H.X. Wang, Y.Z. Zheng	Brazing of Ti/Ni coated diamond
Qingdao University of Science and Technology Qingdao 266042, People Rep. China	S.L. Yang	Diffusion brazing of aluminum to stainless steel
Huazhong University Science and Technology, **Mechanic Institute** Wuhan 430074, People Rep. China	J. Wu, F.R. Zhang	Vacuum brazing of stainless steel to WC-Co cemented carbides
Sichuan University Chengdu 610065, People Rep. China	Zhi-hong Dong, Hong-yuan Fan	Brazing of titanium using Ag-8Al-6Sn, Ag-15Al-1Mn-1Si filler metals
Italy		
Universita di Ancona, **Instituto di Scienze Fisiche** Ancona 60131, Italy **Dept. di Scienze dei Materiali e della Terra** Ancona 60129, Italy	F. Rustichelli, M Ceretti G.Albertini N. Specchia, A. Pagnotta	Brazing of carbon-carbon composites to molybdenum for nuclear reactor applications, study of stresses in brazed joints. Brazing of titanium matrix composites
Politecnico di Torino, **Dept. of Material Science and Chemical Engineering** Corso Duca degli Abruzzi 24, Torino 10129, Italy	Milena Salvo, Monica Ferraris (monica.ferraris@polito.it) Ph: +39-011-564-4687, Fax: +39-011-564-4699 Pietro Appendino, V. Casalegno, F. Smeacetto, P. Lemoine, M. Merola, F. Marino	Brazing of C/SiC and C-C composites for nuclear reactor applications. Reaction brazing of Si_3N_4/$MoSi_2$ and Si_3N_4/Wsi_2 composites. Brazing of C-C composites to copper by direct contact melting of Cu
University of Padua	Calliari (irene.calliari@unipd.it),	Vacuum brazed joints for superconductors

Via Marzolo 9, Padova 35131, Italy	E. Ramous, K. Brinelli, M. Dabala	
University of Bologna, **Dept. of Physical and Inorganic Chemistry** Bologna 40136, Italy	A. Brillante, L. Farina	Brazing of heat-resistant SiC-SiC joints using molybdenum as filler metal
Portugal		
Universidade do Minho, **Dept. de Engenharia Mecanica** Campus de Azurem, 4800-058 Guimaraes, Portugal **Centro de Materiais Ceramicos e Compositos**	Dr. M.A. Guedes, A.M.P. Pinto (aguedes@dem.uminho.pt) L.A. Rocha, E. Ariza (edith@dem.uminho.pt) A.M. Costa	Brazing of titanium and TiAl alloys. Diffusion brazing and electrochemical behavior of Ti/Al_2O_3 joints
Universidade do Porto, **Dept. de Engenharia Metalurgica a Materiais** GMM/IMAT, Faculdade de Engenharia, Rua Dr. Roberto Frias, 4200-465 Porto, Portugal	M. F. Vieira, F. Viana	Brazing of titanium and TiAl alloys
Universidade de Coimbra, **Dept. de Engenharia Mecanica**	A.S. Ramos, M.T. Vieira	Brazing of titanium and TiAl alloys
Universidade de Aveiro, **Dept. de Engenharia Ceramica e do Vidro** Aveiro 3810-193, Portugal	R.F. Silva (rsilva@cv.ua.pt), Ph: +351-234-370243, Fax: +351-234-425300 A. Palavra, A.J.S. Fernandes, F.M. Costa S. Agathopoulos, S. Pina, R.N. Correia	Diffusion brazing and electrochemical behavior of Ti/Al_2O_3 joints. Brazing of zirconia to titanium alloys for biomedical implants using active filler metals. Wettability and reactive brazing of CVD diamond plates with metals
Spain		
Universidad Complutense de Madrid, **Dept. de Ciencia de los Materials e Ingenieria Metalurgica** Madrid, Spain	A. Urena, J.M.G. de Salazar, M.D. Escalera, M.I. Fernandez	Brazing of aluminum matrix composites using Bsi-4 filler metal
University of Vigo, **CASTI** Lagoas-Marcosende, Vigo 36200, Spain	C. Serra	Wettability and reactive brazing of thick CVD diamond film
Austria		
University of Vienna,	Prof. C. Schuster	Brazingof ceramics with Cu-Sn-Ti and

Institute of Physical Chemistry Vienna, Austria		Cu-Zn-Ti active filler metals
Belorussia		
Polotskiy University Polotsk, Belorussia	Prof. F. Panteleenko	Reactive brazing of carbon steels, stainless steel, and high-speed W-containing steels using Fe-C-Si-B filler metal
Taiwan		
National Dong Hwa University, **Dept. of Material Science and Engineering** Hualien 974, Taiwan	Prof. R.K. Shiue (rkshiue@mail.ndhu.edu.tw) Ph: +886-3-863-4209, Fax: +886-3-863-4200 H.Y. Chan, D.W.Liaw	Infrared brazing of steels and TiAl alloys. Infrared brazing of steels and TiNi shape memory alloys. Brazing of Ti-6Al-4V to TZM (molybdenum) using BAg-8. Infrared brazing Cu to Ti using Ag-5Al filler metal
National Taiwan University of Technology, **Dept. of Material Science and Engineering** 1 Roosevelt Rd., Sec.4, Taipei 106, Taiwan	Prof. S.K. Wu (skw@ccms.ntu.edu.tw) Ph: +886-2-2363-7846 Fax: +886-2-2363-4562 S.Y. Chen, S.J. Lee, C.H. Chan, Prof. T.H. Chuang, W.P. Weng Prof. S.T.Lin, S.F. Huang, H.L. Tsai,	Infrared brazing of steels and TiAl alloys. Infrared brazing of steels and $Ti_{50}Ni_{50}$ shape memory alloy Brazing of zirconia using active filler metals Ag-Cu-Ti and Sn-Ag-Ti. TLP brazing of Inconel 718 superalloy with Ni-P and Ni-Cr-P filler metals. Brazing of aluminum matrix composites using Sn-Ag-Ti active filler metal. Laser brazing of diamond grits using Cu-Ti-Sn filler metal. Infrared brazing Cu to Ti using Ag-5Al filler metal
Chung-Hua University, **Dept. of Mechanical Engineering** Hsin-Chu 300, Taiwan	Prof. M.S. Yen	Brazing of zirconia using active filler metals Ag-Cu-Ti and Sn-Ag-Ti. Diffusion (TLP) brazing of Inconel 718 superalloy with Ni-P and Ni-Cr-P filler metals
National Chiao Tung University, **Institute of Material Science and Engineering** Hsinchu 30050, Taiwan	C.T. Kuo, C.R.Lin, H.M. Lien	Brazing of diamond to stainless steel and cemented carbides using active filler metals

Tatung University, **Dept. of Materials Engineering** 40 Chungshan North Rd., 3rd Sec., Taipei 10451, Taiwan	L.H. Chiu (lhchiu@ttu.edu.tw) Ph: +886-2-259-25252, Fax: +886-2-259-36897 W.C. Hsieh, C.H. Wu	Vacuum brazing of duplex stainless steels. Mechanical testing of brazed joints
National Cheng-Kung University, **Dept. of Material Science and Engineering** Tainan 701, Taiwan	E. Chang, C.-H. Chen	Brazing of titanium alloys using Ti-Ni, Ti-Ni-Cu, and Ti-Zr-Ni-Cu filler metals
Poland		
Politechnika Czestochowska **Instytut Modelowania I Automatyzacji Procesow** Czestochowa, Poland	S. Wiewiorowska	Silver-based brazing alloys
Politechnika Wroclawska Wroclaw, Poland	Prof. A. Ambroziak, Dr. Mirski, A. Lange	Brazing aluminum to copper using Ni interlayer. Brazing of chromium steel using BNi-5 for automotive catalyst device
Politechnika Warszawska **Instytut Mikroelektroniki I Optoelektroniki** Ul. Koszykowa 75, Waszawa 00-662, Poland	W. Kaminski, J. Kesik R. Kisiel,W. Gasior (nmgasior@imim-pan.krakow.pl)	Residual stresses in SiC-Cu brazed joints
Warsaw University of Technology, **Institute of Material Technology** 85 Narbutta st., Warsaw 02-254, Poland	W.K. Wlosinski M.B.Nuri	Brazing of carbon fibers to ceramics using Ag-Cu-Ti filler metal. Mechanical properties of brazed joints of SiALON ceramic to austenitic steel
Politechnika Koszalinska, **Dept. of Mechanical Engineering** Koszalin, Poland	Dr. Zdzislaw Wlodarski	Fluxes for aluminum brazing
Slovakia		
Zilinska Univerzita **Katedra Technologickeho Inzinerstva** Zilina, Slovakia	Dr. Ivan Durmis	Brazing of copper tubes
Slovak Technical University, **Dept. of Materials and Technologies** Bratislava, Slovensko	Dr. P. Sejc	MIG arc brazing of galvanized steel using Cu-3Si filler metal

Romania		
Technical University of Cluj-Napoca, 3400 Cluj Napoca, Romania	T. Petrisor	Low-activation brazing of SiC_f/SiC fiber-reinforced compposites
Korea		
Inha University, **Dept. of Mechanical Engineering** 253 Yonghyun-dong, Num-gu, Inchon 402-751, Korea **School of Materials Science and Engineering** 253 Yonghyun-dong, Num-gu, Inchon 402-751, Korea	S.-P. Lu, O.-Y. Kwon S.-H. Lee, D.-S. Jung, J.-W. Han, B.-D. You J-S. Ryu, M-S. Kim (mskim@inha.ac.kr) Ph: +82-32-860-7541, Fax: +82-32-868-3607	Brazing of WC/Ni-Cr-B-Si composite coatings. Brazing of Al-Si and Al-Mn-Zn alloys
Korea Advanced Institute of Science and Technology, Dept. of Materials Science 373-1 Kusong-dong, Yusong-gu, Daejon 305-701, Korea	W.H. Sohn, H.H. Bong, S.H. Hong (shhong@mail.kaist.ac.kr) Ph: +82-42-869-3327	Brazing Aluminum to Titanium by Al-Si-Mg filler metal
Seoul National University, **Dept. of Inorganic Materials Engineering** Seoul 151-742, Korea	S. Kang	Brazing of ceramics to metals using Au-Ni-Cr-Fe filler metals to get heat-resistant joints
Yonsei University, **Dept. of Metallurgical Engineering** Seoul, 120-749, Korea	B. Rhee (rheebh@vitzrotech.com) , D. Kim	TLP brazing of duplex stainless steel using Ni-Cr-Fe-B-Si filler metal
Pusan National University. **Dept. of Materials Engineering** Pusan 609-735, Korea	H.K.Lee, C.Y. Kang	Brazing of duplex stainless steel using Ni-Cr-Si-B filler metal
Sungkyunkwan University, **Dept. of Advanced Materials Engineering** 300 Cheoncheon-dong, Jangan-gu, Suwon, Kyounggi-do, 440-746, Korea	Prof. S.-B. Jung (sbjung@skku.ac.kr), W.-B. Lee	Vacuum brazing of WC-Co cemented carbides to carbon steel using Cu and amorphous Ni-B-Si interlayers
Seoul Technical High School, **Dept. of Metallurgy** Seoul 156-810, Korea	Dr. B.-D. Kwon	Vacuum brazing of WC-Co cemented carbides to steel using Cu and amorphous Ni-B-Si interlayers
Korea Institute of Industrial Technology 35-3 Hongcheon-ri, Ipjang-myeon, Cheonan-si, Chungceongnam-do 330-825, Korea	S.-Y. Shin, J.-H. Kim, D.-M. Lee	Amorphous brazing filler metals of the system Cu-Ni-Zr-Ti
India		
Bengal Engineering College, **Dept. of Metallurgy and Materials Engineering** Howrah 711103, West Bengal, India	Mainak Ghosh, Sukumar Kundu, Subrata Chatterjee (schatterjee46@yahoo.com)	Reactive diffusion brazing of titanium to stainless steel using Ni interlayer

Jadavpur University **Dept. of Inorganic Chemistry** Calcutta 700 032, India	M.B. Sana	Active brazing filler metals of the Ag-Cu-Ti system
Indian Institute of Technology, **Dept. of Materials and Metallurgical Engineering** Kanpur, UP 208116, India	I.Chakravarty, S.P. Gupta (shantpg@iitk.ernet.in) Ph: +91-1512-597-640, Fax: +91-1512-597-505	Brazing alumina to iron, nickel, and chromium alloys using active filler metals
Singapore		
Nanyang Technological University, **School of Materials Engineering** Nanyang Ave., Singapore 639798	J.X. Zhang (p147227659@ntu.edu.sg) or (jixuan@yahoo.com), R.S. Chandel, H.P. Seow	TLP brazing of alumina to stainless steel throgh Ni-Cr foil
National University of Singapore, **Dept. of Mechanical and Production Engineering** Kent Ridge Crescent, Singapore 119260	S.K. Tung, L.C. Lim, M.O. Lai, H. Wu	Solidification and post-braze treatment of Ni-Cr-Si-B brazed joints
Brazil		

Universidade Federal de Rio Grande do Norte, **Dept. of Engenharia Mecanica** Campus Lagoa Nova, Natal, RN 59072-970, Brazil	R.M. do Nascimento, A.E. Martinelli	Brazing of metals to ceramics
Universidade Federal de Santa Catarina, **Dept. of Engenharia Mecanica,** **Laboratorio de Soldagem** Campus Universitario Trindale, Florianopolis, SC 88040-900, Brazil	A.J.A. Buschinelli	Brazing of metals to ceramics
Turkey		
Firat University, **Dept. of Metallurgical and Materials Engineering** Elazig 23119, Turkey	O. Yilmaz (osyilmaz@firat.edu.tr) H. Celik	Diffusion brazing of stainless steel and copper bimetal
Erciyes University, **Dept. of Mechanical Engineering** Kayseri 38039, Turkey	M.B. Karamis (karamisb@erciyes.edu.tr) Ph: +90-352-437-5784, Fax: +90-352-437-5755 A. Tasdemirci, F.Nair	Brazing of copper tubes
Eastern Mediterranean University, **Dept. of Industrial Engineering** Famagusta, Northern Cyprus, Via Nersin 10, Turkey	M. Bengisu	Reactive brazing of alumina using Al interlayer
Mexico		
Universidad Michoacana San Nicolas de Hidalgo, **Instituto de Investigaciones Metallurgicas** Morelia, Mexico	J. Serrato-Rodrigues	Diffusion (TLP) brazing of alumina ceramics to metal matrix composites

Part 2. SOLDERING

University	Personnel	Characterization
USA		
The Johns Hopkins University, **Dept. of Materials Science and Engineering**	J. Wang (jwang@jhu.edu) E. Besnoin, A Duckham, S.J. Spey, M.E.	Soldering of stainless steel or titanium using Sn-Au solder and nanostructured foils of

Maryland Hall 102, 3400 N.Charles St., Baltimore, MD 21218	Reiss, O.M. Knio, T.P. Weihs, A.J. Swiston Jr. (aswistonjr@jhu.edu) Ph: (410)516-4274, Fax: (410)516-5293	Al/Ni, Al/Zr, Ni/Si, and Nb/Si as exothermic reaction heating source
Portland State University, Portland, OR 97207	L.L. Meekisho	Solder joint reliability, modeling
Youngstown State University, Dept. of Mechanical Engineering Youngstown, OH 44555	R.A. McCoy, M. Faizan	Lead-free soldering with Sn-Ag-Cu and Sn-Cu solders
The University of Akron, Dept. of Mechanical Engineering Akron, OH 44325-3903	D.C. Lin, G.X. Wang (gwang@uakron.edu)	Lead-free soldering with Sn-Ag-Cu and Sn-Cu solders
Iowa State University, Dept. of Aerospace Engineering and Mechanics 222 M.D. Ames Laboratory, Ames, IA 50011	Dr. I.E. Anderson (andersoi@ameslab.gov) Ph: (515)294-9791 Dr. B.A. Cook (cook@ameslab.gov) J.L. Harringa, A. Bastawros, A. Antoniou	Aging and fatigue of lead-free Sn-Ag-Cu solders and effect on electrical resistivity. Deformation of Sn-Pb layered joints
University of Maryland, CALCE Electronic Products @ System Center, Mechanical Engineering Department College Park, MD 20742	Dr. A.Dasgupta (dasgupta@eng.umd.edu) Ph: (301)405-5251, Fax: (301)314-9269; P. Casey, M. Pecht (pecht@calce.umd.edu), Y. Fukuda, J. Wu (jwu@calce.umd.edu) Ph: (301)405-5901, Fax: (301)314-9269	Reliability of lead-free solders. Fretting corrosion of lead-free solder plated contacts
State University of New York at Buffalo, Composite Materials Research Lab. Buffalo, NY 14260-4400	D.L. Chung	Electrical resistance testingof soldered joint
Georgia Institute of Technology, School of Materials Science and Engineering 771 Ferst Dr. NW, Atlanta, GA 30332-0245	Z. Zhang, C.P. Wong (cp.wong@mse.gatech.edu) Ph: (404)894-8391, Fax: (404)894-9140 Y.-S. Sun	Lead-free soldering of bumped flip-chip. Microwave soldering. Self-fluxing ability of lead-free solders.
University of California at L.A., Dept. of Materials Science and Engineering Los Angeles, CA 90095-1595	H. Gan, K.N. Tu (kntu@ucla.edu), Gu Xu, Yuhuan Xu (yuhuan@seas.ucla.edu) Ph: (310)825-2451, Fax: (310)206-7353, Mark Date (mark.date@hitmet.com), W.J. Choi (wjchoi@ucla.edu) , T.Y. Lee, K.N. Tu, Shengquan Ou	Electromigration and intermetallic formation in lead-free soldered joints. Sn whisker growth in lead-free solder finish. Optical fiber packaging by lead-free solder and Ti/Cu/Au coating
California Institute of Technology, Jet Propulsion Laboratory 4800 Oak Grove Dr., Pasadena, CA 91109-8099	J.K. Bonner (john.k.bonner@jpl.nasa.gov) Ph: (818)354-1320, Fax: (818)393-5456 L. Del Castillo, A. Mehta	Lead-free solders for printed wiring assembles.

	Dr. Andrew Shapiro (aashapiro@aol.com) Ph: (818)393-7311, Fax: (818)393-5055	Environmental impact of lead-free solders
University of California, **Dept. of Materials Science and Engineering** Irvine, CA 92697-7070 **Dept. of Environmental Analysis and Design**	D. Kim, C.C. Lee (cclee@uci.edu) Prof. Oladele Ogunseitan, Prof. J.D.Saphores,	Flux-free soldering in air using Sn-Bi-Au solder. Toxicity and extraction impact of lead-free solders
University of California, **Dept. of Chemical Engineering and Materials Science** Davis, CA 95616-5294	Prof. J.M. Schoenung (jmschoenung@ucdavis.edu) Ph: (530)752-5840, Fax: (530)752-9554	Environmental impact of lead-free solders
State University of New York, **Dept. of Physics and Institute of Materials Research** Binghampton, NY 13902-6016	R.K. Kinyanjui, A. Zribi, E.J. Cotts (ecotts@binghampton.edu) L.P. Lehman (lplehman@binghampton.edu)	Interface of Au-Pb-Sn solder with Ni substrate. Thermal fatigue of Sn-Ag-Cu solder joints
Michigan State University, **Dept. of Materials Science and Mechanics** 2527 Engineering Building, East Lansing, MI 48824-1226	T.R. Bieler, J.P. Lucas, F. Guo, S. Choi, K.N. Subramanian (subraman@eng.msu.edu), A.U. Telang	Creep behavior and reliability of Sn-Ag- and Sn-Ag-Cu-Ni based solders for electronic applications.
University of Michigan-Dearborn, **Department of Mechanical Engineering** Dearborn, MI 48128	Yong Wei (weiyong@umich.edu) Ph: (313)593-4976 C.L. Chow	Fatigue, thermo-mechanical behavior and failure of soldered joints
University of Michigan at Ann Arbor, **Center of Wireless Integrated Microsystems** 111 Engineering Programs Building, 2609 Draper Ave., Ann Arbor, MI 48109-2102	Brian H. Stark (bhstark@engin.umich.edu) Ph:(734)936-3832, Fax: (734)647-1781	Mold and transfer technique for lead-free flux-free soldering in thin-film packaging
Northeastern University, **Dept. of Mechanical and Manufactural Engineering** Boston, MA 02115	T. Ando, H. Fukuda, C. Tuffile	Spray deposition of Sn-Pb solders
Cornell University, **Dept. of Materials Science and Engineering** Ithaca, NY 14853	T.M. Korhonen (tkk3@cornell.edu), M.A. Korhonen	Thermomechanical fatigue of Sn-Ag-Cu solder joints
University of Texas at Austin Austin, TX	Ted Carper, Steven Dunford, C.-U. Kim, J.-Y. Park, R. R. Kabade, V. Puligandla	Lead-free solders of the Sn-3.8Ag-0.7Cu-(0.5-5)Au system
Rensselaer Polytechnic Institute, **Dept. of Materials Engineering** Troy, NY	W. Yang, R.W.Messler Jr., L.E. Felton	Laser beam soldering with Sn-Ag solder

Colorado School of Mines, **Center for Welding, Joining and Coating** **Dept. of Metallurgical & Materials Engineering** 1500 Illinois Street, Golden, CO 80401	Prof. Stephen Liu, J.C. Madeni - Ph: (303)273-3090	Intermetallic formation and interface reaction during lead-free soldering using Sn-based solders
Arizona State University, **Dept. of Chemical and Materials Engineering** Tempe, AZ 85287-6006	M. Kerr, N. Chawla (nchawla@asu.edu) Ph: (480)965-2402, Fax: (480)965-0037	Creep behavior of Sn-Ag solder at small length scale
Japan		
Osaka University, **Dept. of Manufacturing Science,** **Graduate School of Engineering** Suita, Osaka 565-0871, Japan **Dept. of Materials Science and Processing** 2-1Yamada-oka, Suita, Osaka 565, Japan **Institute of Scientific and Industrial Research** Mihogaoka 8-1, Ibaraki, 567-0047, Japan **Dept. of Adaptive Machine Systems** Suita, Osaka 565-0871, Japan	K.F. Kobayashi, A. Hirose, T. Hojo, Y. Sogo, K. Miwa, H. Iwanishi, T. Yamada (tosinori@mapse.eng.osaka-u.ac.jp), H. Akamizu, K. Uenishi, K. Yasuda (yasuda@mapse.eng.osaka-u.ac.jp), K. Fujimoto (fujimoto@mapse.eng.osaka-u.ac.jp), J.-M. Kim (kjm@mapse.eng.osaka-u.ac.jp), T. Hiramori T. Tanaka, M. Matsuda, K. Nakao, Y. Katayama, D Kaneko, S. Hara Y. Nakao, K. Nishimoto,K. Saida, T. Fujimoto, K. Murabe, Y. Fukaya, S.-H. Huh (shhuh12@sanken.osaka-u.ac.jp) K.-S. Kim (kskimm12@sanken.osaka-u.ac.jp) K. Suganuma (suganuma@sanken.osaka-u.ac.jp), Ph: +81-6-6879-8521, Fax: +81-6-6879-8522, T. Sakai, C.-W. Hwang (hwang12@sanken.osaka-u.ac.jp) M. Haga	Lead-free soldering with Sn-Ag-Bi-In and Sn-Zn-Bi solders. Flux-free soldering. Chip Size Packaging. Low-melting solders for electronic pakaging. Wetting of Ga-In, Ga-Bi, Ga-Sn based solders. Soldering of Ti+ Cu-metallized AlN by Sn-Pb solders. Mechanical properties of Sn-Cu-Au lead-free solders used in electronic pakaging. Sn-Ag-Cu lead-free solders. Interfacial stability with Fe-42Ni
Fukui National College of Technology, **Dept. of Mechanical Engineering** Fukui 916-8507, Japan	T. Nakanishi	Lead-free soldering
Hokkaido University, **School Dentistry, Dept. of Dental Materials** Kita 13 Nishi 8, Kita-ku, Sapporo, Hokkaido 060-8628,	S. Ohkawa, K. Ishii, S. Kondo	Flux soldering of titanium dental alloys

Japan		
Hiroshima University, **Venture Business Lab. & Dept. of Mechanical System Engineering** 2-313 Kagamiyama, Higashi-Hiroshima, 739-8527, Japan	Dr. Xin Ma (maxin@vbl.hiroshima-u.ac.jp) Ph: +81-824-24-7540, Fax: +81-824-24-7881 F. Yoshida	Lead-free solders and Sn-Pb-0.5La solder
National Defense Academy, **Dept. of Materials Science and Engineering** 1-10-20 Hashirimizu Yokosuka, Kanagawa, 239-8686, Japan	H. Esaka, K. Shinozuka, M. Tamura	Lead-free soldering, phase composition of Sn-Ag solder joints
Nagaoka University of Technology Nagaoka 940-2188, Japan	Y. Mutoh, Y. Miyashita	Fatigue behavior of Sn-Ag-Cu and Sn-Ag-Cu-Bi soldered joint
The University of Tokyo, **Center for Advanced Science and Technology** Tokyo, 153-8904, Japan	T. Suga (suga@pe.u-tokyo.ac.jp), K. Saito	Bumping with lead-free solders
Konan University, **Faculty of Science and Engineering,** **High Tech. Research Center** 8-9-1 Okamoto, Higashinada-ku, Kobe-shi, Hyogo 658-8501, Japan **Graduate School of Science** See address above	H. Nawafune, K. Akamatsu K. Shiba, T. Nakatani	Electrodeposition of Sn-Ag-Cu and Sn-Zn lead-free solders
National College of Technology, **Dept. of Materials Science and Engineering** Shiroko-cho, Suzuka, Mie 510-0294, Japan	Dr. T. Kobayashi, Dr. N. Wada	Electrodeposition of Sn-Zn films
Kyushu Institute of Technology, **Dept. of Materials Science and Engineering** Kitakyushu 804-8550, Japan	H. Ohtani, M. Hasebe, K. Doi	Thermodynamic of phase equilibria in the Sn-Ag-Cu-Bi system
Tokyo Metropolitan University, **Dept. of Applied Chemistry, Graduate School of Engineering** 1-1 Minami-Osawa Hachiohji, Tokyo 192-0397, Japan	T. Sugizaki, H. Nakao, T. Watanabe (watanabe-tohru@c.metro-u.ac.jp)	Lead-free Sn-Ag-Cu and Sn-Zn-Bi solder interaction with electroless Ni/immersion gold UBM plating in electronic packaging
Gunma University, **Faculty of Engineering, Dept. of Mechanical System Engineering** 1-5-1 Tenjin-cho, Kiryu 376-8515, Japan	I. Shohji (shohji@me.gunma-u.ac.jp) Ph/Fax: +81-277-30-1544 T. Yoshida	Tensile properties of Sn-ag lead-free solders. Solder joint reliability evaluation of chip scale package
Akita University, **Faculty of System Science and Technology** 84-4 Tsushiya-Ebinokuchi, Honjo, Akita 015-0055, Japan	T. Takahashi, S. Hioki	Tensile properties of Sn-ag lead-free solders
Ehime University **Dept. of Mechanical Engineering**	H. Toyota, T. Ide, H. Yagi	Wetting of graphite and C/C composites by molten Sn and Pb

3 Bunkyo-cho, Matsuyama, Ehime 790-8577, Japan		
Tokyo Institute of Technology, **Graduate School,** **Dept. of Materials Science and Engineering** Yokohama 226-8502, Japan	T. Yamada, K.Miura, M. Kajihara (kajihara@materia.titech.ac.jp)	Diffusion and formationof intermetallics in Sn/Au/Sn at soldering
Kansai University, **Dept. of Mechanical Engineering** 3-3-35 Yamatecho, Suita, Osaka 564-8680, Japan	Junishi Takahashi, Sumio Nakahara (nakahara@ipcku.kansai-u.ac.jp) S. Hisada, T. Fujita	Laser soldering with Sn-Ag-Cu and Sn-Zn-Bi lead-free solder pastes
United Kingdom		
University of Salford, **School of Aeronautical, Mechanical and Manufacturing Engineering,** Salford, Manchester, UK	N.N. Ekere, B. Salam	Lead-free ball grid array packaging
University of Greenwich, **Medway School of Engineering,** **Electronic Manufacturing Research Group** Chatham Maritime, Kent ME4 4TB, UK **School of Computing and Mathematical Sciences** 30 Park Row,London, SE10 9LS, UK	G.J. Jackson (gavin.jackson@henkel.co.uk) B. Salam, N.N. Ekere H. Lu (h.lu@gre.ac.uk) C. Bailey (c.bailey@gre.ac.uk)	Control for intermetallic formation within lead-free solder bumps at Flip-Chip packaging. Soldering of Cucolumn to Al pads on silicon dies for Flip-Chip assembly
Loughborough University, **Wolfson School of Mechanical and Manufacturing Engineering** Loughborough, LE11 3TU, UK	C.Q. Liu (C.Liu@lboro.ac.uk) D. Li, P. Conway	Intermetallic aging in Flip-Chip solder bumps
Kings College, Strand, London WC2R 2LS	S. H. Mannan	Soldering of niobium and tungsten alloy films using In-Sn solders for flip-chip and BGA electronic devices
Canada		
University of Alberta, **Dept. of Chemical and Materials Engineering** Edmonton, Alberta, Canada T6G 2G6	A. He, B. Djurfors, D.G. Ivey	Au-Sn plating for soldering optoelectronics
University of Waterloo, **Dept. of Mechanical Engineering** 200 University Avenue W., Waterloo, Ontario, Canada N2L 3G1	Y. Zhou	Flux-free plasma soldering of UBM layer on silicon wafer
Russia		

Voronezh State Technical University, Center Electronics Moscow Prospekt 14, Voronezh 394026, Russia	V.V. Zenin (zoro@vmail.ru), U.E. Segal, V.N. Belyaev, A.T. Kosilov, G.L. Polner, I.U. Smirnov	Soldering of silver-coated electronic joints. Soldering of gold films with Sn-In solders in microelectronics
Ukraine		
The E.O. Paton Electric Welding Institute, Dept. of Physical-Chemical Processes of Brazing and Soldering 11 Bozhenko St., Kiev, 03680, Ukraine	Prof. Victor F. Khorunov Ph/Fax: +380-044-227-2677, khorunov@paton.kiev.ua, Dr. S.V.Maksymova Ph: +380-044-227-1434, Fax: +380-044-227-2677 maksymova@paton.kiev.ua, O.M. Sabadash Ph: +380-044-227-4658, Fax: +380-044-227-2677	The Paton Institute has graduation **academic programs** in brazing and soldering. The scientific interests are in soldering aluminum, esp. aluminum soldering fluxes, and lead-free Sn-Bi-Zn solders.
Donbas State Academy of Civil Engineering Makeevka-23, Ukraine	V.D. Aleksandrov, C.A. Frolova	Crystallisation kinetics in the Sn-Bi system
Germany		
Aachen University of Technology, Materials Science Institute Augustinerbach 4-22, Aachen, D-52062, Germany	Prof. Eric Lugscheider (lugscheider@msiww.rwth.-aachen.de) Ph: +49-241-166020 Fax: +49-241-1660217 K. Bobzin, A. Erdle (erdle@msiww.rwth-aachen.de) Ph: +49-241-809-5347 Fax: +49-241-809-2264	Active solder Sn-Ag-Ti-Ga deposition by magnetron sputtering (PVD process)

Chemnitz University of Technology, **Institute of Composite Materials** Chemnitz, D-09107, Germany	Prof. Bernhard Wielage (bernhard.wielage@mb.tu-chemnitz.de) Ph.:+49-371-531-6169 Fax: +49-371-531-6179 Silke Muecklich (silke.muecklich@mb.tu-chemnitz.de), Ph: +49-371-531-5384 Fax: +49-371-531-6179 Ina Hoyer Ph: +49-371-531-5232 Fax: +49-371-531-6179 (ina.hoyer@mb.tu-chemnitz.de) Thomas Grund Ph: +49-371-531-5356 Fax: +49-371-531-6179 (thomas.grund@mb.tu-chemnitz.de)	The University has M.S., and graduation **academic programs** in soldering and brazing technology. Development of lead-free filler materials Fluxless soldering and brazing of magnesium alloys and mixed joints with Zn-Mg-Al filler materials Furnace brazing of aluminum alloys with Al-Zn filler metals
Dresden University of Technology, **Dept. of Electrical Engineering, Packaging Research Group** TU Dresden, IET, Dresden 01062, Germany	S. Wiese (weise@ihm.et.tu-dresden.de) Ph: +49-351-463-33172, Fax: +49-351-463-37172 E. Meusel, K.J. Wolter	Microstructure and properties of eutectic Sn-Ag and Sn-Ag-Cu lead-free solders
Technische Universitat Berlin, **Institut fur Mechanik** Einsteinufer 5, Berlin 10587, Germany	Wolfgang H. Mueller (wolfgang.h.mueller@tu-berlin.de) Ph: +49-30-314-27682 Fax: +49-30-314-24499	Microstructure of soldered joints after aging and over service time
Austria		
Technische Universitat Wien, **Institut fur Festkoerperphysik** E-138, Wiedner Hauptstrasse 8-10, Wien 1040, Austria **Institute of General Physics E-143,** Wiedner Hauptstrasse 8-10, Wien 1040, Austria	C. Eisenmender-Sittner (christoph.eisenmenger@ihp.tuwien.ac.at) Ph: +43-1-58-801-13774 Fax: +43-1-58-801-13889 H. Bangert, A. Bergauer, J. Brenner C. Tomastic	Wetting and spreading of Sn on aluminum interface. Solid state diffusion of Sn in polycristalline aluminum

Italy		
Politechnico di Milano, **Dept. Chimica, Materiali e Ingegneria Chimica** Via mancinelli 7, Milano 20131, Italy	P.L. Cavallotti (pietro.cavallotti@polimi.it) Ph: +39-022-399-3149, Fax: +39-022-399-3180 L. Magagnin, V. Sirtori	Soldering with lead-free Sn-Ag-Cu solder on autocatalitic Co-P metallization
Finland		
Helsinki University of Technology **Laboratory of Electronic Production Technology** P.O. Box 3000, Espoo 02150, Finland	T.T. Mattila, V. Vuorinen, J.K. Kivilahti, T. Laurila	Impact of PCB coating on reliability of lead-free Sn-Ag-Cu chip-scale joints. Interfacial reactions between Sn-Cu solder and Ni/Au metallization
China		
City University of Hong Kong, **Dept. of Physics and Materials Science** 83 Tat Chee Ave., Hong Kong SAR, People Rep. of China	Robery K. Y. Li, N.H. Yeung, C.M.L. Wu (Lawrence.Wu@cityu.edu.hk) C.M.T. Law	Mechanical testing and reliability of Sn-Pb solder joints in electronics. Sn-Ag lead-free solders doped with rare-earths
Hong Kong University of Science and Technology, **Dept. of Mechanical Engineering, Electronic Packaging Lab.,** Kowloon, Hong Kong	Eric C.C. Yan, S.W. Ricky Lee	Lead-free soldering of Ni-plated plastic ball grid array (PBGA) packages
Dalian University of Technology, **Dept. of Materials Engineering** Dalian 116023, People Rep. of China	J. Zhao D.Q. Yu, L. Wang	Fatigue behavior of Sn-Ag-Cu and Sn-Ag-Cu-Bi lead-free soldered joint. Sn-Ag solders doped with rare-earth elements
Sichuan University, **Dept. of Metal Materials Engineering** Chengdu 610065, People Rep. of China	D.-T. Gong, X.-B. Liu, G.-Y. Wang	Lead-free soldering with Sn-Ag-Bi solders
Tsinghua University, **Dept. of Mechanical Engineering** Beijing 100084, People Rep. China	Guisheng Zou (zougsh@tsinghua.edu.cn) Ph: +86-106-279-4670, Aiping Wu (wuaip@tsinghua.edu.cn) Ph: +86-10-6-277-3859, Deku Zhang, Fanming Meng, Hailin Bai, Yongqing Zhang	Strength of Sn-40Pb soldered joints of Al_2O_3 ceramic plated with electroless Ni-P

Korea		
Hanyang University, **Dept. of Materials Engineering** Seoul, 133-791, Korea	Young-Ho Kim (kimyh@hanyang.ac.kr) Tae Hyun Kim	Lead-free soldering with Sn-Ag-Cu and Sn-Cu solders
Sungkyunkwan University, **Dept. of Advanced Materials Engineering** 300 Cheoncheon-dong, Jangan-gu, Suwon 440-746, Korea **School of Metallurgy & Materials Engineering** Suwon, Kyunggi-do, 440-746, Korea	J-W. Yoon, S-B. Yung (sbjung@skku.ac.kr) Ph: +82-31-290-7359, Fax: +82-31-290-7371 Y.-Ho.Lee, H.B. Kang, S.J. Suh, C.W.Yang, J.-Y. Park	Lead-free soldering with Sn-Ag-Cu and Sn-Cu-Ni solders. Intermetallic layer growth Partially-melted lead-free solders
Seoul National University, **School of Material Science and Engineering** Seoul 151-742, Korea	S.-M. Hong, C.-S. Kang, J.-S. Ha, J.S. Lee, J.P. Jung (jpjung@uoscc.uos.ac.kr)	Flux-free and lead-free soldering of Sn-ag bump flip chip
KAIST- Korea Advanced Institute of Science and Technology, **Dept. of Materials Science and Engineering** 373-1 Kusong-dong, Yusong-gu, Daejeon 305-701, Korea	W.-S. Kwon, K.-W. Paik, D.K. Joo, Jin Yu (jinyu@kaist.ac.kr) Y.C. Sohn (sonyc@kaist.ac.kr) Y.-D. Jeon (doo@kaist.ac.kr) Ph: +82-42-869-3375 Prof. H. Mo Lee,S.W. Jeong, J.H. Kim,	Under bump Ni-P metallization for lead-free soldering. Interface reactions and intermetallics formation. Creep of Sn-Ag-Cu solders. Thermodynamics of lead-free solders. Lead-free soldering in electronic packaging.
Changwon National University, **Dept. of Materials Science and Engineering** Changwon 541-773, Korea	C.G. Lee	Lead-free soldering with Sn-Ag-Cu and Sn-Cu solders
University of Seoul, **Dept. of Materials Science and Engineering** Seoul 130-743, Korea	K.-H. Oh, W.-H. Bang J.K. Moon, K.I. Kang, J.S. Lee J.P. Jung (jpjung@uoscc.uos.ac.kr)	Lead-free soldering with Sn-Bi coated Sn-Ag solders. Flux-free plasma soldering of UBM layer on silicon wafer
Far East University, **Dept. of Electronic Engineering** Gamgok-Myun, Korea	E.G. Kang	Diffusion soldering using In-Ag films
Korea University, **Dept. of Electrical Engineering** Anam-dong, Sungbuk-ku, Seoul,Korea	M.Y. Sung (semicad@korea.ac.kr) J.Y. Kim, S.W. Park, L.Y.Yoon, H.Y.Kim	Diffusion soldering using In-Ag films
Hanbat National University, **Dept. of Materials Science and Engineering** San 16-1, Duk-Myoung-Dong, Yuseong-Gu, Deajeon 305-764, Korea	T.Y. Lee	Spalling of intermetallics during reaction of lead-free solders with Ni-P metallization
Yeojoo Institute of Technology, **Dept. of Electronic Engineering** Yeojoo 469-705, Korea	Kyung-Seob Kim (kkseob@yeojoo.ac.kr) Ph: +82-31-880-5204, Fax: +82-31-886-0357	Aging of solder bump joints for optical modules

Taiwan		
National Taiwan University, **Institute of Material Science and Engineering** Taipei 106, Taiwan, ROC	S.Y. Chang, L.C. Tsao, M.J. Chiang, T.H. Chuang, H.M. Wu, C.N. Tung (tunghan@ccms.ntu.edu.tw), T.-C.Chang (n5889114@sparc1.cc.ncku.edu.tw) Ph: +886-6-258-5663 M.D. Cheng,	Active soldering of ITO using Sn-Ag-Ti(Ce, Ga) solders. Dip soldering with Sn-Zn-Ag solders
National Cheng Kung University, **Dept. of Materials Science and Engineering** 1 Ta-Hsueh Rd., Tainan 70101, Taiwan	T.C. Chang, Ph: +886-6-238-0208 (n5889114@sparc1.cc.ncku.edu.tw), M.H. Hon, K.-I. Chen, Kwang.-Lung Lin (matkllin@mail.ncku.edu.tw) , Yeh-Hsiu Liu, Chiang-Ming Chuang, Chia-Wei Huang (matkllin@mail.ncku.edu.tw)	Lead-free soldering with Sn-Zn-Ag and Sn-Zn-Ag-Al/Ga solders. Mechanical properties and solid reactions in soldered joints. Failure and reliability of Pb-5Sn solder bumps. Interfacial reaction of Sn-Zn solders on Cu and Ni-P/Au substrates
National KaohsiungUniversity of Applied Sciences, **Dept. of Materials Science and Engineering** 415 Chien-Kung Rd., Kaohsiung 80782, Taiwan	M.C. Wang (mcwang@nuu.edu.tw) Ph:+886-3-738-1710, Fax: +886-3-732-4047	Lead-free soldering with Sn-Zn-Al solders. Phase transformation in solder joints
National Tsing Hua University, **Dept. of Materials Science** Hsinchu, Taiwan	Jih-Hung Yeh, Jenq-Gong Duh (jgd@mse.nthu.edu.tw) Ph: +886-3-571-2686, Fax: +886-3-571-2686	Soldering of electroless Ni film on alumina ceramic
National Dong Hwa University, **Dept. of Materials Science and Engineering** Hualien 974, Taiwan, R.O.C.	R.-K. Shiue (rkshiue@mail.ndhu.edu.tw), C.-L. Lin, J.-L. Ou	Sn-Bi-Ag-In lead-free solders
National Taiwan Ocean University, **Dept. of Materials Science and Engineering** Keelung 202, Taiwan, R.O.C.	L.-W. Tsay	Sn-Bi-Ag-In lead-free solders
Tung-Fang Institute of Technology, **Dept. of Electronics and Information** Kaohsiung County, 829, Taiwan	K.-I. Chen	Lead-free soldering with Sn-Zn-Ag and Sn-Zn-Ag-Al solders doped with Ga.
National United University, **Dept. of Materials Science and Engineering** 1 Lien-Da, Kung-Ching Li, Miao Li 360, Taiwan	M.C. Wang (mcwang@nuu.edu.tw) Ph:+886-3-738-1710, Fax: +886-3-732-4047	Intermetallics formation in Sn-Zn-Al lead-free solder on Cu substrate
Tung Nan Institute of Technology, **Dept. of Mechanical Engineering** Taipei, Taiwan	Jyh-Wei Lee, J.-H. Jeh	Interfacial reaction between Sn-37Pb solder and electroless Ni/Cu/Al_2O_3 substrate

National Chiao Tung University, **Dept. of Material Science and Engineering** Hsin-chu 30050, Taiwan	Chih Chen (chih@cc.nctu.edu.tw) C.M. Lu, T.L. Shao, C.J. Yang	Electromigration in eutectic Sn-Pb solder bump
Thailand		
Thammasat University, **Dept. of Mechanical Engineering** Pathumthani 12121, Thailand	C. Kanchanomai	Lead-free soldering with Sn-Ag-Cu-Bi solders
Singapore		
Institute of Microelectronics	G. Viswanadam, C.C. Wong	Soldering in electronic packaging
Nanyang Technological University, **School of Materials Engineering** Nanyang Ave., Singapore 639798 **School of Mechanical and Production Engineering** Nanyang Ave., Singapore 639815	G.Y. Li (asgyli@ntu.edu.sg), B.L. Chen (pg01538912@ntu.edu.sg) Ph: +65—6-790-6161, Fax: +65-6-790-0920, Zhong Chen (aszchen@ntu.edu.sg) Ph: +65—6-790-4256, Fax: +65-6-790-9081, Min He, Wee Hua Lau, P.T. Yeo, A. Kumar, Z.W. Zhong, K.W. Ong, T.H. Low, John H.L. Pang (mhlpang@ntu.edu.sg)	Intermetallic growth kinetics in lead-free Sn-Ag-Cu and Sn-Ag solder joints. Cr/Cu/Ni underbump metallization for lead-free soldering. Effect of Sb on intermetallic growth in Sn-Ag-Cu lead-free soldering. Ni metallization by liquid state reaction . Cu plating in bump-free Flip Chip packaging
National University of Singapore, **Dept. of Chemical Engineering** Kent Ridge, Singapore 119260 **Dept. of Mechanical and Production Engineering** 2 Engineering Dr., Singapore 119260 or 9 Engineering Dr., Singapore 117576	W.H. Yu, E.T. Kang (cheket@nus.edu.sg) Ph: +65-6874-2189, Fax: +65-6779-1936 K.G. Neoh Y. Zhang, S.S. Ang, A.A.O. Tay (mpetayao@nus.edu.sg) W.S. Chai, M. Gupta, J.F. Caers	Electroless Sn-free platingof Si substrate for soldering. Gold plating for lead-free soldering
Sweden		
Chalmers University of Technology, **Dept. of Production Engineering** SE-412 96 Goeteborg, Sweden	A. Thoelen, Li Xiao, J. Liu, Z. Lai	Mechanical properties of bulk lead-free solders
Denmark		
Technical University of Denmark,	Kristian Moelhave (krm@mic.dtu.dk)	Soldering of nanostructures by electron beam

Microelectronic Center, Lyngby 2800, Denmark	Dorte N. Madsen, Soeren Dohn, Peter Boeggild	deposition
Poland		
Warsaw University of Technology, **Institute of Microelectronics & Optoelectronics** Koszykowa Street 75, Waszawa 00-662, Poland	R. Kisiel,W. Gasior (nmgasior@imim-pan.krakow.pl)	Electrical and mechanicalproperties of Sn-Ag-Cu lead-free solders
Czech Republic		
Brno University of Technology, **Faculty of Mechanical Engineering** Technicka 2, Brno 61669, Czech Republic	V. Ustohal, J. Dupak (dupak@isibrno.cz) Fax: +420-5-415-14402	Soldering of titanium using In-Pb solders
Brazil		
State University of Campinas, **Dept. of Materials Engineering** UNICAMP, P.O.Box 6122, Campinas, 13083-970, Brazil	O.L. Rocha, C.A. Siqueira, A. Garcia (amaurig@fem.unicamp.br)	Diffusion and solidification of Sn-Pb solders
India		
Indian Institute of Technology at Bombai, **Dept. of Metallurgical Engineering and Material Science** Powai, Mumbai, 400076,India	A. Dobriyal, P. Ramakrishanan	Lead-free Sn-Ag-Bi solders made by mechanical alloying technique