

At-A-Glance Schedule

All meeting rooms are in the Chrysler Center for Continuing Engineering Education, Bonisteel Boulevard and Murfin Drive, North Campus, The University of Michigan, Ann Arbor, Michigan.

SUNDAY, MAY 13

6:00-8:00 pm Registration, Marriott Inn, Main Lobby

MONDAY, MAY 14

7:00 am Breakfast, Win Schuler's/Marriott Inn
 8:00 am Registration, Chrysler Center, Lobby
 9:15 am Opening Session, Auditorium
 10:00 am Coffee Break, Lower Lobby
 10:30 am Session 1, Room 133
 Session 2, Auditorium
 Luncheon, North Campus Commons
 12:00 Session 3, Room 133
 1:30 pm Session 4, Room 165
 3:00 pm Coffee Break, Lower Lobby
 3:30 pm Session 5, Room 133
 Session 6, Room 165
 6:00 pm Reception, Win Schuler's/Marriott Inn
 7:00 pm Banquet, Win Schuler's/Marriott Inn

TUESDAY, MAY 15

7:00 am Breakfast, Win Schuler's/Marriott Inn
 8:00 am Registration, Chrysler Center, Lobby
 8:30 am Session 7, Room 133
 Session 8, Room 165
 10:00 am Coffee Break, Lower Lobby
 10:30 am Session 9, Room 133
 Session 10, Room 165
 12:00 Luncheon, North Campus Commons
 1:30 pm Session 11, Room 133
 Session 12, Room 165
 3:00 pm Coffee Break, Lower Lobby
 3:30 pm Session 13, Room 133
 Session 14, Room 165
 Evening Free

WEDNESDAY, MAY 16

7:00 am Breakfast, Win Schuler's/Marriott Inn
 8:30 am Session 15, Room 133
 Session 16, Room 165
 10:00 am Adjournment

NAMRC-VII

Seventh NORTH AMERICAN METALWORKING RESEARCH CONFERENCE

May 13-16, 1979

The University of Michigan • Ann Arbor, Michigan

with the
participation of
the following:

ASME
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NAMRC-VII Seventh NORTH AMERICAN METALWORKING RESEARCH CONFERENCE

May 13-16, 1979
Ann Arbor, Michigan

for
Scientific, Engineering
and Research Personnel
in the field of
METALWORKING

THE UNIVERSITY OF MICHIGAN
EXTENSION SERVICE
Conferences & Institutes
412 Maynard Street
Ann Arbor, Michigan 48109

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GENERAL & REGISTRATION INFORMATION

LOCATION

Program sessions will be held at the Chrysler Center for Continuing Engineering Education, Bonisteel Boulevard and Murfin Drive, on the North Campus of The University of Michigan, Ann Arbor, Michigan, USA.

REGISTRATION

To assure enrollment, your registration should be received no later than Tuesday, May 1, 1979. Please complete and return the accompanying form, along with payment, to: U-M Extension Service, Conferences & Institutes, 412 Maynard St., Ann Arbor, Mich. 48109, USA.

Name badges and meal tickets should be called for on arrival at the Registration Desk, which will be open 6-8 p.m. on Sunday, May 13 at the Marriott Inn and 8 a.m.-2 p.m. on Monday and Tuesday, May 14-15, in the Lobby of the Chrysler Center.

FEES

The registration fees for the conference are \$180 per person full 3-day fee and \$100 per person one-day fee. The fee includes a copy of the NAMRC-VII Proceedings; breakfasts May 14, 15, 16; luncheons May 14, 15; banquet May 14; parking permits. (The one day fee includes meals only for day attending.) If registering for one day only, please indicate on the registration form the day you will attend.

The fee is due in advance, and **must be paid in U.S. funds** by either postal money order or a bank check drawn on a U.S. bank, payable to The University of Michigan.

CANCELLATIONS/REFUNDS

To qualify for a refund of fees, notification of cancellation of registration must be received no later than Wednesday, May 9, 1979.

MEALS

The following meals are included in the registration fee (only for day attending if paying one-day fee): breakfasts at Win Schuler's/Marriott Inn on May 14, 15, 16; luncheons at the North Campus Commons (adjacent to the Chrysler Center) May 14 and 15; banquet on May 14 at Win Schuler's/Marriott Inn. Additional banquet tickets may be ordered in advance at a cost of \$15 each. All other meals are on your own.

LODGING

Block reservations for conference participants have been made at the Marriott Inn, located at 3600 Plymouth Road at the US-23 interchange. To secure a room from the block, reservations should be placed directly with the facility no later than April 30, 1979 (Marriott Inn, 3600 Plymouth Road, Ann Arbor, Mich. 48105; (313) 769-9800 or toll free (800) 228-9290). Single \$30, Double \$35. When contacting the Inn, be sure to mention the name of the conference, type of accommodations you desire, approximate arrival and departure dates and times, and your name, address and phone number. Rates are subject to 6% tax.

SHUTTLE BUS SERVICE

A shuttle bus will run between the Marriott Inn and the Chrysler Center each morning and at the conclusion of the afternoon sessions each day.

PARKING

Parking is free in the Win Schuler's/Marriott Inn lot. Limited parking is available in a University lot east of the Chrysler Center. Parking permits are needed for the Chrysler Center lot. They will be mailed, if requested with acknowledgment of registration if time allows, and will also be available for pick-up at the Registration Desk. The cost of University parking permits is included in the registration fee. Your cooperation in observing posted parking regulations is appreciated.

REACHING ANN ARBOR

Ann Arbor may be reached by car via US-23 from the north and south and I-94 from the east and west. Air transportation is available at Detroit Metropolitan Airport, about a 30-minute drive east of Ann Arbor on I-94. Regularly scheduled limousine service (\$6 per person, one way) and bus service (\$3.20 per person, one way) are available to and from the airport, and car rentals are available at the airport. Ann Arbor is also served by Greyhound and other bus lines and Amtrak rail service. Please contact your local agent for current air, bus and rail service schedules.

SPOUSES' PROGRAM

A tour of Greenfield Village and Henry Ford Museum, located in Dearborn, Michigan, has been scheduled for all day Monday, May 14, for those not participating in the technical sessions. On Tuesday, May 15, there will be a slide presentation of historical buildings on the U-M campus. A fee of \$35 per person includes transportation to and from Greenfield Village and Henry Ford Museum, admission to both facilities, and luncheons on May 14 and 15.

To facilitate planning and scheduling of transportation and meal arrangements, registration for the Spouses' Program activities must be made in advance. Please check the appropriate spot on the registration form and indicate the name(s) of those participating.

PROCEEDINGS

Participants paying full or one-day conference registration fees will receive one copy of the NAMRC-VII Proceedings. Those who wish additional copies, at \$30 each, may order them in advance or at the conference. Mail order copies will be available after May 16, 1979. Mail orders should be sent directly to: Society of Manufacturing Engineers, 1 SME Drive, P.O. Box 930, Dearborn, Michigan 48128, USA. Proceedings ordered in advance on the accompanying registration form should be picked up at the Conference Registration Desk.

FOR FURTHER INFORMATION

The University of Michigan Extension Service, Department of Conferences and Institutes, 412 Maynard Street, Ann Arbor, Michigan 48109; telephone (313) 764-5304. Hours: 8 a.m.-Noon and 1-4 p.m., Monday-Friday.

CONFERENCE SPONSORS

Departments of Mechanical Engineering and Industrial and Operations Engineering and Industrial Development Division, Institute of Science and Technology, The University of Michigan in conjunction with:

- American Society of Mechanical Engineers
- Canadian Society of Mechanical Engineers
- Society of Manufacturing Engineers
- American Association of CIRP Industrial Sponsors
- American Institute of Industrial Engineers
- American Institute for Metals
- American Institute of Mining, Metallurgical and Petroleum Engineers

CONFERENCE PROSPECTUS

The Seventh North American Metalworking Research Conference (NAMRC-VII) has, as its purpose and scope, the presentation and discussion of the results of basic and applied metalworking research. The format of the Conference is similar to NAMRC-I held at McMaster University in 1973, NAMRC-II held at the University of Wisconsin in 1974, NAMRC-III held at Carnegie-Mellon University in 1975, NAMRC-IV held at Battelle Columbus Laboratories and Ohio State University in 1976, NAMRC-V held at the University of Massachusetts in 1977, and NAMRC-VI held at the University of Florida in 1978.

The papers presented at this Conference will describe work in the fields of metal forming, metal removal, and manufacturing systems and control.

All papers presented at the Conference are contained in the Conference PROCEEDINGS which will form part of a special issue of the SME Manufacturing Engineering Transactions, and represent work conducted in many renowned metalworking research centers in North America, Europe and Japan.

CONFERENCE ORGANIZATION

The North American Metalworking Conferences have been created by a group in North America dedicated to furthering knowledge, its dissemination and application in the field of materials processing.

The papers presented at this conference were selected by the Scientific Committee of NAMRC from a large number of submissions. All Conference arrangements were made by the NAMRC-VII Organizing Committee and the Department of Conferences and Institutes of The University of Michigan Extension Service.

SCIENTIFIC COMMITTEE

- B. Avitzur
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University
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- W. Rice, Chairman
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- M. Shaw
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- J. Tlusty
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- B. von Turkovich
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- S. Wu
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University of Michigan

SEVENTH NORTH AMERICAN METALWORKING RESEARCH CONFERENCE

MAY 13-16, 1979 • THE UNIVERSITY OF MICHIGAN • ANN ARBOR, MICHIGAN

SUNDAY, MAY 13

6:00-8:00 pm Registration, Marriott Inn, Main Lobby

MONDAY, MAY 14

7:00 am Breakfast, Marriott Inn

8:00 am Registration, Chrysler Center, Lobby

OPENING SESSION, 9:15 am, Chrysler Center, Auditorium

Chairman

William B. Rice, Chairman, Scientific Committee, NAMRC-VII; Mechanical Engineering Department, Queen's University, Kingston, Ontario

Speakers

Words of Welcome: **David V. Ragone**, Dean, College of Engineering, The University of Michigan

Introductory Remarks: **William B. Rice**

Announcements: **Don Smith**, Director, Industrial Development Division, Institute of Science and Technology, The University of Michigan

COFFEE BREAK, 10:00-10:30 am, Chrysler Center, Lower Lobby

SESSION 1, 10:30 am, Chrysler Center, Room 133

Co-Chairmen

F. W. Boulger, Battelle Columbus Laboratories, Columbus, Ohio

B. Avitzur, Lehigh University, Bethlehem, Pennsylvania

Authors

"Cold and Hot Drawing of Titanium-Alloys," **G. Schroeder**, Brown Boveri Research Centre, Baden-Dattwil, Switzerland.

"Experimental Study of Defect Formation During Cold Extrusion of a Transmission Gear Blank," **S. K. Suh** and **B. I. Bachrach**, Ford Motor Company, Detroit, Michigan.

SESSION 2, 10:30 am, Chrysler Center, Auditorium

Co-Chairmen

J. R. Mansperger, Warner and Swasey Company, Solon, Ohio
S. M. Pandit, Michigan Technological University, Houghton, Michigan

Authors

"A New Technique in Shock Excitation Testing for Improvement of Measuring Accuracy," **T. Moriwaki** and **K. Iwata**, Kobe University, Kobe, Japan, and **S. Ueno**, Japan Society for the Promotion of Machine Industry, Japan.

"Significance of Structural Joints in Thermal Deformation of Machine Tools," **M. H. Attia** and **L. Kops**, McGill University, Montreal, Quebec, Canada.

Monday, May 14, continued

SESSION 6, 3:30 pm, Chrysler Center, Room 165

Co-Chairmen

R. S. Hahn, Cincinnati Milacron-Heald, Worcester, Massachusetts

D. T. Koenig, General Electric Company, Schenectady, New York

Authors

"An Investigation of Orthogonal Cutting Via Acoustic Emission Signal Analysis," **D. Dornfeld**, University of California-Berkeley, Berkeley, California.

"Techniques for Noise Control in Aluminum Extrusion Sawing," **M. F. DeVries**, **J. G. Bollinger**, and **D. Dauw**, University of Wisconsin-Madison, Madison, Wisconsin.

"Chatter Vibration Monitoring Using On-Line Identification of Discrete Second Order Autoregressive Time Series Models," **W. R. DeVries**, The University of Michigan, Ann Arbor, Michigan.

"Noise Generation by Milling and Methods of Analysis," **H. K. Tonshoff**, **G. Rohr** and **R. Westphal**, University of Hannover, Federal Republic of Germany.

RECEPTION, 6:00-7:00 pm, Win Schuler's/Marriott Inn

BANQUET, 7:00-9:00 pm, Win Schuler's/Marriott Inn

TUESDAY, MAY 15

BREAKFAST, 7:00 am, Win Schuler's/Marriott Inn

REGISTRATION, 8:00 am, Chrysler Center, Lobby

SESSION 7, 8:30 am, Chrysler Center, Room 133

Co-Chairmen

M. Field, Metcut Research Associates, Cincinnati, Ohio

K. J. Trigger, University of Illinois, Urbana, Illinois

Authors

"Wire and Rod Drawing—The Process and the Product," **R. A. Kohser**, University of Missouri-Rolla, Rolla, Missouri, and **D. J. Chronister**, McDonnell-Douglas Corporation, St. Louis, Missouri.

"Forming of Tee Junction on Metal Tubes by an Elastomer Rod Technique," **D. B. Marreco** and **H. A. Al-Qureshi**, Instituto Tecnológico de Aeronautica-Sao Jose dos Campos, Sao Paulo, Brazil.

"Load Requirement and Process Limitations for Open Die Extrusion of Rod," **H. Binder** and **K. Lange**, Universität Stuttgart, Stuttgart, West Germany.

SESSION 8, 8:30 am, Chrysler Center, Room 165

Co-Chairmen

A. F. Welch, General Motors Overseas Division, Detroit, Michigan

C. Barth, T.B.W. Incorporated, Cleveland, Ohio

Tuesday, May 15, continued

SESSION 11, 1:30 pm, Chrysler Center, Room 133

Co-Chairmen

K. G. Ludema, The University of Michigan, Ann Arbor, Michigan
P. Doolan, Whirlpool Corporation, Benton Harbor, Michigan

Authors

"The Plastic Indentation of Aluminum with Circular Punches," **A. T. Male**, Westinghouse Research and Development Center, Pittsburgh, Pennsylvania.

"A Prediction of the Influence of Friction in the Ring Test by the Finite Element Method," **P. Hartley**, **C. E. N. Sturgess** and **G. W. Rowe**, University of Birmingham, Birmingham, England.

"Investigation on Lubricants for the Extrusion of Aluminum Using the Pin-on-Ring Test," **L. J. Noordermeer**, **A. L. Braun**, and **A. G. Tangena**, Philips Research Laboratories, Eindhoven, The Netherlands.

"The Effect of Lateral Pressure on Plastic Tensile Instability," **F. Negroni**, Catholic University of Chile, Santiago, Chile; **A. H. Shabik**, University of California-Los Angeles; and **E. G. Thomsen**, University of California-Berkeley.

SESSION 12, 1:30 pm, Chrysler Center, Room 165

Co-Chairmen

R. C. Wilson, The University of Michigan, Ann Arbor, Michigan
R. Jerue, DeVlieg Machine Company, Royal Oak, Michigan

Authors

"Computer-Aided Design and Manufacturing of Forging Rolls," **B. Mullineux** and **W. A. Knight**, University of Birmingham, Birmingham, England.

"Computer Graphics for N/C Tape Verification of Milling Operations," **H. A. ElMaraghy**, McMaster University, Hamilton, Ontario, Canada, and **W. S. Krywokusky**, Canadian Institute of Metalworking, Hamilton, Ontario, Canada.

"The Production of Unconventional Twist Drill Points," **M. A. Fugelso**, The Pennsylvania State University, University Park, Pennsylvania, and **S. M. Wu**, University of Wisconsin-Madison, Madison, Wisconsin.

COFFEE BREAK, 3:00-3:30 pm, Chrysler Center, Lower Lobby

SESSION 13, 3:30 pm, Chrysler Center, Room 133

Co-Chairmen

R. M. Caddell, The University of Michigan, Ann Arbor, Michigan
A. O. Schmidt, The Pennsylvania State University, University Park, Pennsylvania

Authors

"Formability Models for 2024-O Aluminum Alloy Sheet Material," **V. Nagpal**, Battelle Columbus Laboratories, Columbus, Ohio; **B. S. Shabel**, Alcoa Laboratories, Pittsburgh, Pennsylvania; **J. F. Thomas, Jr.**, Wright State University, Dayton, Ohio; and **H. L. Gegel**, Air Force Materials Laboratory,

LUNCHEON, 12:00-1:30 pm, North Campus Commons

SESSION 3, 1:30 pm, Chrysler Center, Room 133

Co-Chairmen

H. L. Gegel, Wright Patterson Air Force Base, Dayton, Ohio
K. L. Weinmann, Michigan Technological University, Houghton, Michigan

Authors

"Experimental Verification of Finite Element Analysis of Axial Symmetric Deformation Processes," **M. Brouha, J. E. de Jong**, and **K. J. A. van der Weide**, Philips Research Laboratories, Eindhoven, The Netherlands.

"Use of the Slip-Line Method in Deep Drawing of Large Irregular Shaped Components," **V. V. Hasek** and **K. Lange**, Universitat Stuttgart, Stuttgart, West Germany.

"Theoretical and Experimental Analysis of an Extrusion Process," **F. Gallo** and **A. Barbero**, Institute Sperimentale Metalli Leggeri, Novara, Italy, and **G. Murari**, Politecnico de Torino, Torino, Italy.

SESSION 4, 1:30 pm, Chrysler Center, Room 165

Co-Chairmen

S. C. Jain, Wyman-Gordon Company, Grafton, Massachusetts
L. Kops, McGill University, Montreal, Quebec, Canada

Authors

"A Study of Crater Wear—Flank Wear Interactions in Machining Using Selectively Coated Tools," **S. Ramalingam** and **R. Van Wyk**, Georgia Institute of Technology, Atlanta, Georgia.

"Measurement of the Strain Rate in the Primary Deformation Zone in the Machining of Three Metals," **M. G. Stevenson**, University of New South Wales, Sydney, Australia; **H. Bao**, Purdue University, West Lafayette, Indiana; **J. R. Montgomery**, University of New South Wales, Sydney, Australia.

"Influence of Very High Cutting Speed on Chip Formation Mechanics," **B. F. von Turkovich**, The University of Vermont, Burlington, Vermont.

COFFEE BREAK, 3:00-3:30 pm, Chrysler Center, Lower Lobby

SESSION 5, 3:30 pm, Chrysler Center, Room 133

Co-Chairmen

A. L. Hoffmann, Battelle Columbus Laboratories, Columbus, Ohio
S. Kobayashi, University of California-Berkeley, Berkeley, California

Authors

"Research Apparatus for Simulating High-Speed Drawing of Thin Strip," **M. L. Devenpeck** and **J. H. Rigo**, U.S. Steel Corporation, Monroeville, Pennsylvania.

"Measurement of Differential Friction Coefficients in Ironing," **S. Rajagopal** and **S. Misra**, National Can Corporation, Chicago, Illinois.

"Analysis of the Residual Stresses Resulting from Cold Rolling of Threads and Their Effect on Fatigue Behavior," **M. Vasilarios**, David W. Taylor Naval Ship Research and Development Center, Annapolis, Maryland, and **H. Kuhn**, University of Pittsburgh, Pittsburgh, Pennsylvania.

Authors

"Computer Evaluation of Surface Topography (CEST) of Sheet Metal," **A. Shuaib** and **S. M. Wu**, University of Wisconsin-Madison, Madison, Wisconsin.

"An Open-Loop Adaptive Control Methodology," **W. J. Zdeblick**, Metcut Research Associates, Cincinnati, Ohio, and **R. E. DeVor**, University of Illinois at Urbana-Champaign, Urbana, Illinois.

"An Adaptive Control Solution to the Problem of Automation and Optimization of EDM," **J. P. Kruth**, **R. Snoeys**, and **H. van Brussel**, Katholieke Universiteit Leuven, Heverlee, Belgium.

COFFEE BREAK, 10:00-10:30 am, Chrysler Center, Lower Lobby

SESSION 9, 10:30 am, Chrysler Center, Room 133

Co-Chairmen

T. C. Woo, The University of Michigan, Ann Arbor, Michigan
K. K. Wang, Cornell University, Ithaca, New York

Authors

"Computer-Aided Simulation of Hot and Cold Nosing of Shells," **G. D. Lahoti**, Battelle Columbus Laboratories, Columbus, Ohio, and **F. M. Lee**, U.S. Army Armament R&D Command, Dover, New Jersey.

"Lubrication and Friction During the Nosing of an Extrusion Billet," **W. R. D. Wilson** and **B. B. Aggarwal**, University of Massachusetts, Amherst, Massachusetts; and **A. B. Norelius** and **H. Quist**, Chalmers Institute, Gothenberg, Sweden.

"Working Pressures and Deformation Modes in Axi-Symmetric Closed-Die Pressing of Shaft and Rib Type Components," **N. R. Chitkara** and **E. Tezgoran**, University of Manchester Institute of Science and Technology, Manchester, England.

SESSION 10, 10:30 am, Chrysler Center, Room 165

Co-Chairmen

C. J. Oxford, National Twist Drill and Tool, Rochester, Michigan
J. C. Mazur, The University of Michigan, Ann Arbor, Michigan

Authors

"Some Effects of Carbon Tetrachloride on Tool Forces in Orthogonal Cutting of Steel and Copper," **A. K. Lakhwara**, Amdahl Corporation, Sunnyvale, California, and **W. B. Rice**, Queens University, Kingston, Ontario, Canada.

"A Study on the Self-Propelled Rotary Tool," **A. H. Bakkala**, Travel Accessories, Incorporated, Orlando, California, and **C. H. Kahng**, Michigan Technological University, Houghton, Michigan.

"An Experimental Study of Chip Formations with Self-Propelled Rotary Tools," **A. A. Radwan**, University of Cairo, Cairo, Egypt.

LUNCHEON, 12:00-1:30 pm, North Campus Commons

WPafb, Dayton, Ohio.

"Forming Limit Diagrams for the Cold Forging of Metals," **M. C. Shaw**, Arizona State University, Tempe, Arizona.

"Strain Paths, Limit Strains and the Forming Limit Diagram," **A. J. McCandless** and **A. S. Bahrani**, Queen's University of Belfast, Belfast, Northern Ireland.

"On Yield Loci of Anisotropic Cubic Metals," **W. F. Hosford**, The University of Michigan, Ann Arbor, Michigan.

SESSION 14, 3:30 pm, Chrysler Center, Room 165

Co-Chairmen

C. S. Hutchins, Manufacturing Data Systems, Incorporated, Ann Arbor, Michigan

J. T. Black, Ohio State University, Columbus, Ohio

Authors

"On Comparisons of New Methodologies Applied to Manufacturing Design," **C. Ho**, University of Massachusetts, Amherst, Massachusetts.

"Manufacturing Axioms and Their Corollaries," **D. R. Wilson**, **A. C. Bell**, **N. P. Suh**, **F. Van Dyck**, and **W. W. Tice**, Massachusetts Institute of Technology, Cambridge, Massachusetts.

EVENING FREE

WEDNESDAY, MAY 16

BREAKFAST, 7:00 am, Win Schuler's/Marriott Inn

SESSION 15, 8:30 am, Chrysler Center, Room 133

Co-Chairmen

A. Sabroff, Eaton Corporation, Willoughby Hills, Ohio

L. V. Colwell, The University of Michigan, Ann Arbor, Michigan

Authors

"Grain Size Effects and the Practice of Super-Plastic Forming/Diffusion Bonding of Titanium Alloys," **S. P. Agrawal** and **E. D. Weisert**, Rockwell International, El Segundo, California.

"Consolidation of Powders by Direct Electrical Discharge," **S. T. S. Al-Hassani** and **M. Shakeri**, The University of Manchester Institute of Science and Technology, Manchester, England.

SESSION 16, 8:30 am, Chrysler Center, Room 165

Co-Chairmen

I. Ham, The Pennsylvania State University, University Park, Pennsylvania

J. E. Mayer, Jr., Ford Motor Company, Dearborn, Michigan

Authors

"Design of Chamfers for Ease of Assembly," **C. Ho** and **G. Boothroyd**, University of Massachusetts, Amherst, Massachusetts.

"Economic Selection of Cutting Conditions for Constrained Single of Multipass Operation," **D. S. Ermer**, University of Wisconsin-Madison, Madison, Wisconsin, and **R. K. Pradhan**, Micro Switch Corporation, Freeport, Illinois.

"Coefficient of Variation: An Index of Tool Reliability and its Significance in Automated Production," **L. Aiden Kendall**, Washington State University, Pullman, Washington, and **A. K. Sheikh**, Michigan Technological University, Houghton, Michigan.

The University of Michigan
Registration Form—385621
**NORTH AMERICAN METALWORKING
RESEARCH CONFERENCE**
May 13-16, 1979

(for office use only)

ck/m.o. no. _____ \$ _____
Personal Check <input type="checkbox"/> Other Check <input type="checkbox"/>
Issued by: _____

Name _____ Affiliation _____
Business Address _____ Phone (_____) _____
City _____ State _____ ZIP _____

Enclosed in a check or money order in U.S. Funds payable to The University of Michigan in the amount of \$ _____ for:

- ___ Full registration @ U.S. \$180 per person (includes NAMRC-VII Proceedings; parking permit; breakfast May 14, 15, 16; luncheon May 14, 15; and banquet May 14)
- ___ One-day registration @ U.S. \$100 per person (includes NAMRC-VII Proceedings, parking permit, breakfast & luncheon day attending, banquet if attending May 14)
Day attending May 14 May 15
- ___ Spouses' Program @ U.S. \$35 per person Name _____
- ___ Additional Banquet tickets @ U.S. \$15 each
- ___ Additional copies of NAMRC-VII Proceedings @ U.S. \$30 per copy
- ___ Please send me parking permits for May 14 May 15 May 16

To register more than one person (except spouse), please duplicate or request additional forms.

Mail for delivery by Tuesday, May 1, 1979, to: U-M Extension Service, Conferences & Institutes, 412 Maynard St., Ann Arbor, Mich. 48109, U.S.A.

**See reverse side for
Registration & General Information**