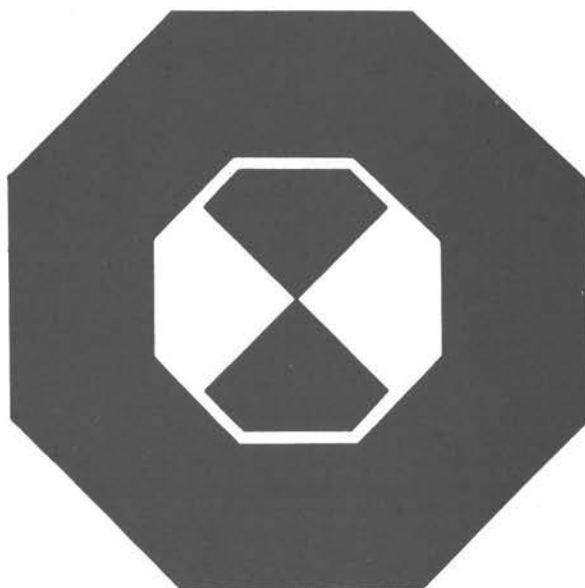


HIGH PRESSURE SCIENCE AND TECHNOLOGY

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**Proceedings of the
12.AIRAPT and 27.EHPRG Conference
University Paderborn 1989**

**Edited by
W. B. Holzapfel and P. G. Johannsen**

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This journal is dedicated solely to research in high pressure science and technology. The journal will publish original full-length papers and short research reports of new developments, as well as timely review articles. It will provide an important new forum for the presentation of experimental and theoretical advances in high pressure science in subjects such as condensed matter physics and chemistry, geophysics and planetary physics, shockwaves in condensed matter, instrumentation and techniques, synthesis of new materials, chemical kinetics under high pressure and industrial applications. The journal will also publish regular announcements of national or international meetings, colloquia workshops, and schools. Also, when feasible, brief accounts or proceedings of such meetings will appear along with the relevant contacts. Notes for contributors can be found at the back of the Journal.

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Ordering Information

Six issues per volume. Current Volume Block: 2-4.

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(continued on inside back cover)

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12. AIRAPT and 27. EHPRG Conference
University Paderborn 1989

Edited by
W. B. Holzapfel and P. G. Johannsen

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PREFACE

Pressure is a basic variable in many different fields of science and technology, and many aspects of high pressure science and technology can be considered as a link between as different fields as astrophysics, geosciences, biology, chemistry, physics and various areas of chemical, electrical and mechanical engineering and applied production processes. A need for improved international communication between scientists and engineers related to these different aspects of high pressure science and technology stimulated in the early 1960's the foundation of AIRAPT (Association International pour la Recherche et l'Avancement des Hautes Pressures et Technologies), the International Association for Research and Advancement of High Pressure Science and Technology.

One major action of this association was and is still directed towards the support of international conferences on these subjects, and the list of previous AIRAPT conferences may document the international character of AIRAPT.

1965	Le Creusot	France
1968	Schloß Elmau	F.R.G.
1970	Aviemore, Scotland	U.K.
1974	Kyoto	Japan
1975	Moscow	U.S.S.R.
1977	Boulder, CO	U.S.A.
1979	Le Creusot	France
1981	Uppsala	Sweden
1983	Albany, NY	U.S.A.
1985	Amsterdam	the Netherlands
1987	Kiev	U.S.S.R.

Similar actions on a smaller european level are stimulated by the annual meetings of the European High Pressure Research Group (EHPRG), and it is therefore a common procedure that AIRAPT conferences in Europe are usually organized together with EHPRG.

The 12. AIRAPT and 27. EHPRG meeting started with opening addresses by the Mayor of Paderborn, Mr. Lücke, by the Vice Chancellor of the University of Paderborn, Prof. Dr. Eicher, by the President of AIRAPT, Dr. R.N. Keeler, by the Chairman of EHPRG, Prof. Dr. Jenner, and the Chairman of the conference, Prof. Dr. W.B. Holzapfel, illustrating the historical development of high pressure research as well as the special reasons for locating this conference to Paderborn.

In fact, the very special political developments at this time in Europe were also reflected at this conference by an almost equal attendance from east and west european countries, with 58 participants from the USSR, 37 from Poland, 16 from the GDR, 3 from Yugoslavia, 1 from the CSSR, and 182 from the other countries of Europe. The world-wide character of this conference was documented by a total of 436 participants from 26 countries, with 68 from USA and 32 from Japan- just to mention a few of the other large groups.

After the informal meeting on Monday evening, July 17, in the halls of the University, the opening addresses and the plenary lectures were given on Tuesday morning in the Paderhalle, the city assembly hall and music center. All the topical invited and contributed papers as well as the poster contributions were presented in up to 5 parallel sessions on the university campus during the rest of the week.

Before the closing remarks on late Friday morning, a last plenary lecture by H.G. Drickamer on "High Pressure since P.W. Bridgman - A Personal View" highlighted the developments of high pressure sciences in the last years, with a bright view into the future.

Since the achievements of this conference reflect the efforts and contributions from all the participants as well as from the many volunteers including the members of the International Advisory Committee, the members of the Program Committee, the Organizing Committee as well as the staff and many student volunteers from the University of Paderborn, the editors and chairmen of the Organizing Committees would like to express once again their gratitude to each of them.

Sincere gratitude goes also to the many sponsors for providing the financial means to invite so many speakers and participants setting the frame for this conference and all the stimulating discussions.

Since the whole atmosphere of the conference was also very much affected by the special small events planned and organized by Mrs. Traudl Holzapfel and all her volunteers, both editors of these proceedings would like to thank her deeply once again for all her efforts and contributions.

W. B. Holzapfel

P. G. Johannsen

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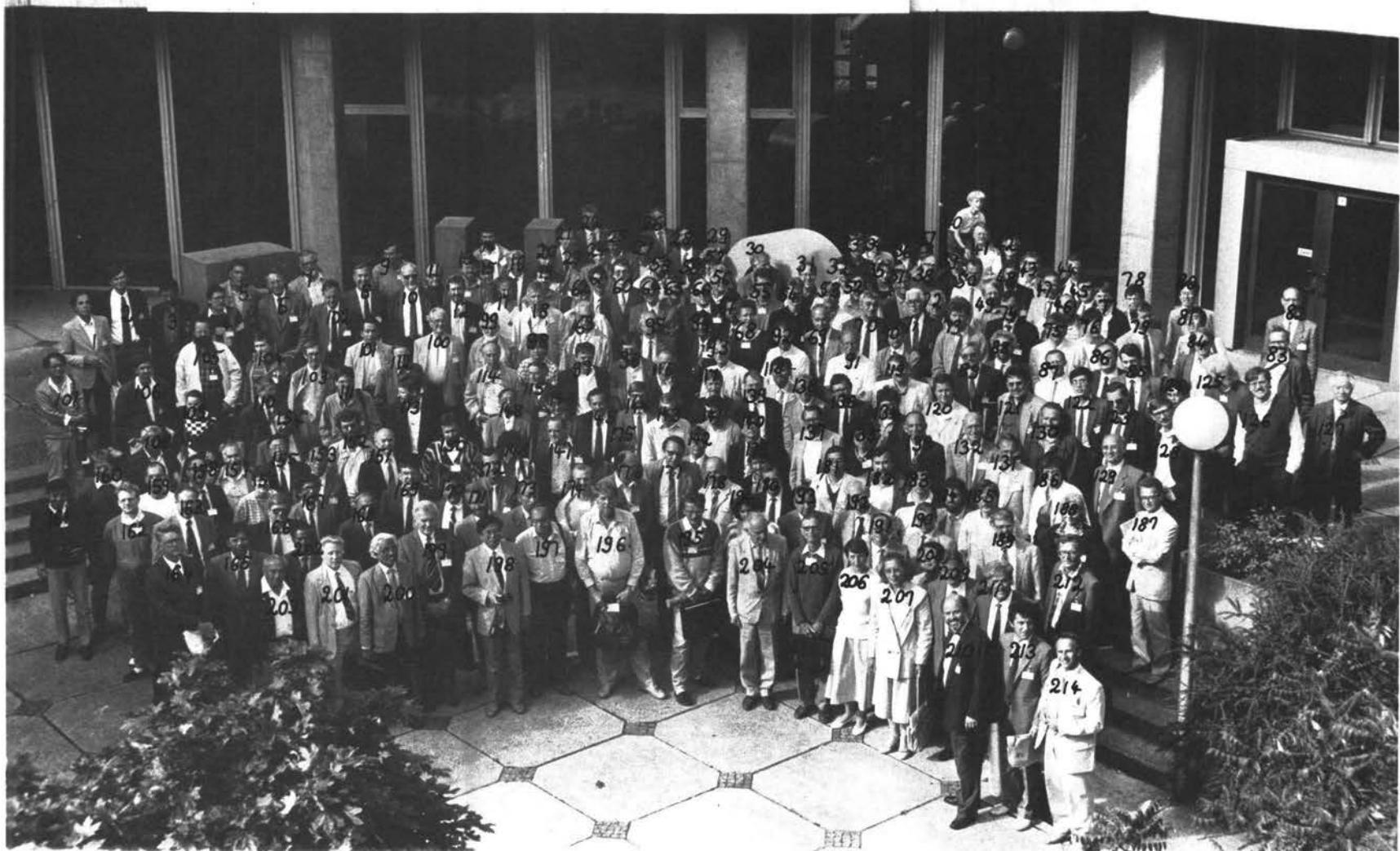
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Proceedings of the
12. AIRAPT and 27. EHPRG Conference
University Paderborn 1989

12. AIRAPT AND 27. EHPRG CONFERENCE
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11 H J Bauer	40 U Hellquist	72 N H Krikorian	105 J P Itié	138 L Maksimow	166 V Domoratsky	199 J Jurzak
12 E van Valkenburg	41 B Hellquist	73 J A Schouten	106 M Busch	139 G Noll	167 S Biswas	200 C R Lahiri
13 M Sneeringer	42 M Hellquist	74 L Styczynski	107 Ji-an Xu	140 H Sam Cho	168 V K Sachdev	202 R Asokamani
14 I Dugandzic'	43 N Dahan	75 J P Pettitet	108 E Chagelishvili	141 F Cansell	169 R Hennus	203 F Prieto
15 M Schroeder	44 I N Makarenko	79 A Jones	109 B Huckestein	143 J Freund	170 Y K Vohra	204 L V Altshuler
16 J Schroeder	45 J L Truffier	80 N Mori	110 H Ahsbahs	144 A W Szafranski	171 S M Filipek	205 F P Bundy
17 A M Redon	47 D Damien	81 T Yagi	111 K Brister	145 R Pucci	172 V A Proskuryakov	206 G V Shpatakovskaya
18 J Staun Olsen	48 A Lefevre	82 C Richter	112 E G Ponyatovsky	146 F Ree	173 A Birks	207 V Degtyareva
19 Th Tröster	50 T Thevenin	83 L Finger	114 E S Persikov	147 S Majchrzak	174 P W G Glover	210 W B Holzapfel
20 M McMahon	51 J M Leger	84 R J Hemley	115 V N Zharkov	148 Su Wenhui	176 V F Nesterenko	211 R F Trunin
21 S Bominar	52 R J Nelmes	86 A N Babushkin	117 R Ingalls	149 A Niedbalska	177 V E Fortov	212 G I Kanel
22 J Vrbka	54 R Kroon	87 J Shaner	119 R LeToulllec	150 M Pisarski	178 A S Steinberg	213 B K Vodolaga
23 J S Loveday	55 P Kortbeek	88 V E Van Doren	120 H Hess	151 Z Witczak	179 S Bertram	214 B Simonenko
24 P Hatton	56 R C Hanson	89 W Weith	121 H P Beck	152 J Glinnemann	180 G Krivonos	
26 A Mazur	58 E Hanke	90 G Demazeau	122 Wang Zifu	153 T F Sun	182 S Habrylo	
27 M Satoh	59 A Eichler	92 A de Kuiper	124 Zhang Wenping	154 T Gregorian	183 Y Sushko	
28 S Ozawa	60 M Spee	93 J M Besson	125 U Lüeße	155 G Zou	184 V I Levitas	
29 P S van der Gulik	61 A F Sanin	94 S K Sikka	126 G Wortmann	156 M van Hinsberg	185 W Sievers	