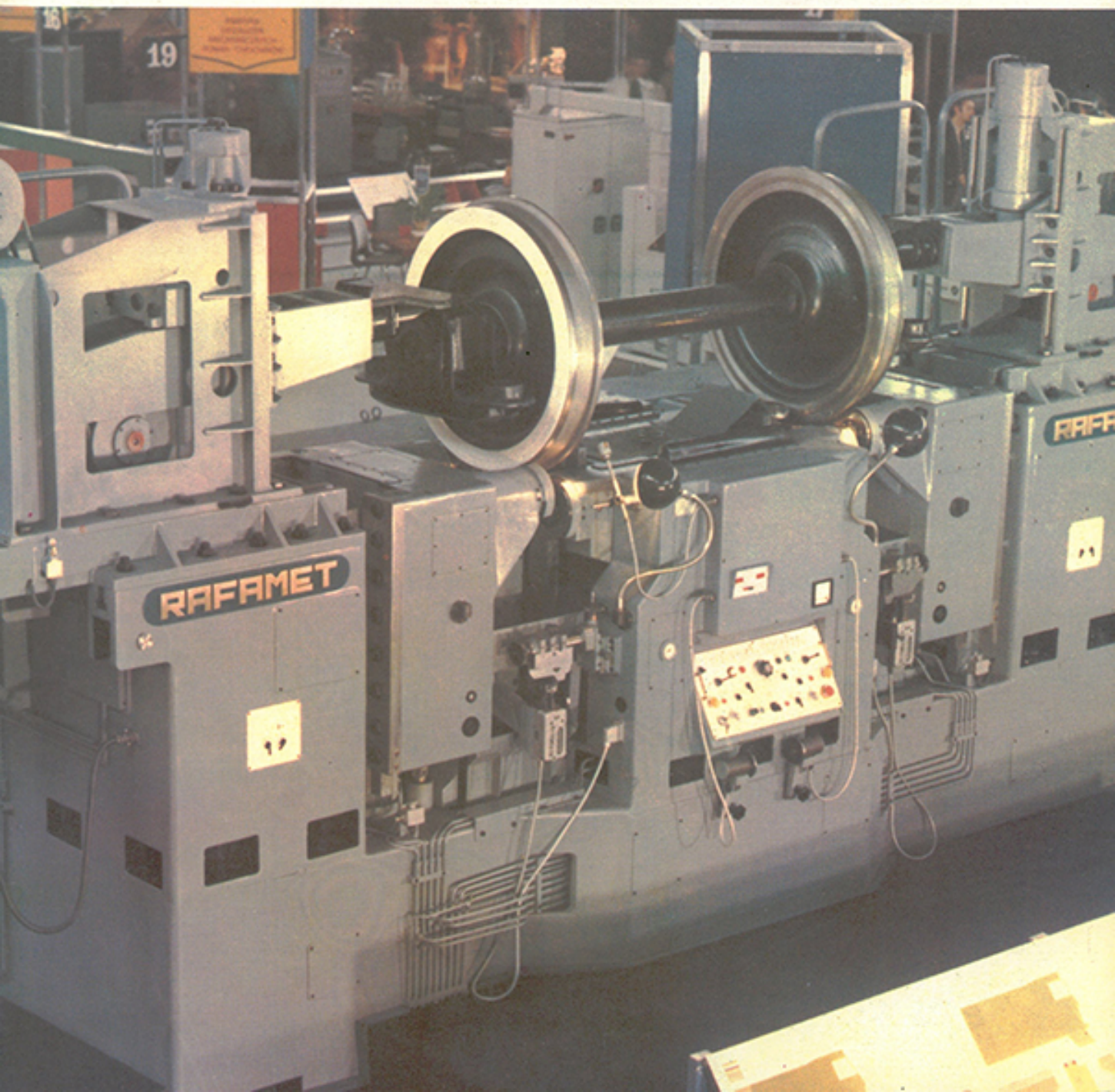




POLISH TECHNICAL REVIEW





POLISH TECHNICAL REVIEW

SIGMA

PUBLISHERS OF TECHNICAL PERIODICALS AND BOOKS SIGMA - AN ENTERPRISE OF THE CENTRAL TECHNICAL ORGANISATION
ul. Biała 4, 00-950 Warsaw, P.O.B. 1004, Tel. 39 11 99. Issued in English, French, German and Russian

CONTENTS

METAL TREATMENT

A roadbed lathe for wheel sets	2
An anode film-type mechanical cutting-off machine ...	3
Chaser diestocks and screwing machines	6
A rectifier welding set	8
A dynamometer for determining the clamping force of machine tool chucks (patent)	9

METALLURGY

Management of metallurgical industry wastes	10
Equipment for the spheroidization of cast iron	14
Novel solutions in pressure casting machines	15
Measurement of the self-weldability of zinc dust (patent)	17

BUILDING

Materials saving designs of steel frame production halls	18
--	----

CHEMISTRY

The production of multicomponent fertilizers with a complete utilization of phosphogypsum	21
Charging head of a rotary cooler (patent)	23
A mould for determining the plasticity curve of plastics (patent)	24
A horizontal reactor for loose and pasty materials (patent)	24

ELECTRONICS

A hybrid system of analyzing and recognizing Polish spoken language	25
Integrated microprocessor circuits made by the MOS technology	27

FARMING MACHINERY

A testing station for analyzing the uniformity of sowing seeds	30
--	----

IN BRIEF	13,
	26

PRESS SERVICE	I -
	VIII

Metal treatment

In this section, two articles are of particular interest. One on a roadbed lathe for wheel sets UGB 150 (gold medal at the Poznań International Fair) manufactured by the RAFAMET Machine Tool Factory, an experienced producer of heavy-duty machine tools for the railway industry. The other is devoted to an anode film-type mechanical cutting off machine designed, together with a new technology of cutting off electric current conducting materials, by the Technical University of Poznań. For construction details and operating parameters of these machines see p. 2

Management of metallurgical industry wastes

The article presents three methods of obtaining alumina: the „sintering and decomposition” method (from aluminiferous wastes), the „acidic technology” (from aluminium silicate raw materials) and the technology of utilizing metallurgical slag. On the basis of the latter technology, Krupp (F.R.G.) and Norquill (Brazil) are starting to build large-scale alumina plants. Another achievement of the Academy of Mines and Metallurgy in Cracow is the method of obtaining titania from „red muds” and laterites. See p. 10

Novel solutions in pressure casting machines

Designers at the PONAR-ŻYWIEC Injection Moulding Machines Factory, while studying the shortcomings of some solutions applied in pressure casting machines, have developed new designs which have considerably improved the operation and efficiency of these machines. Several new types e.g. of valves have been patented. For construction details and the operation parameters see p. 15

The production of multicomponent fertilizers with a complete utilization of phosphogypsum

Phosphogypsum which is formed during the production of wet phosphoric acid was until recently a useless waste whose dumping was detrimental to the natural environment. The Technical University of Wrocław and the „Police” Chemical Works have developed a method of producing multicomponent fertilizers which gets rid of the phosphogypsum wastes and has many other advantages. Its application in factories producing fertilizers by traditional methods, requires small investment outlays only. For details see article on p. 21

Programmatic council: K.Badzmirowski, S.Grużewski (President), S.Okoń, Z.Pawlik, T.Wąsak, J.Toeplitz

Editorial staff: J.Toeplitz (chief editor), I.Chmielewska, A.Witkowski (assistant editors), S.Hilscher (managing editor), E.Karska, J.Wolf

English version: E.Karska

Graphic layout: F.Berącz

Production managers: A.Dziewulska-Kijas, B.Słowińska

Cover photo: A UGB 150 roadbed lathe for wheel sets manufactured by the RAFAMET Machine Tool Factory at Kuźnia Raciborska

Photos in the issue: „Foto-Service” - WHZ

Subscription orders should be addressed to the Ars Polona-Ruch, 00-950 Warsaw, P.O.B. 1002, Krakowskie Przedmieście 7 or to one of the representatives of this company abroad. The annual subscription rate for 1984 amounts to \$ 48.- (Ł.30.-) or the equivalent in other currencies. In the socialist countries, catalogue prices of the local distribution centres apply.

Printing office: SIGMA - Warsaw

Index no 36915