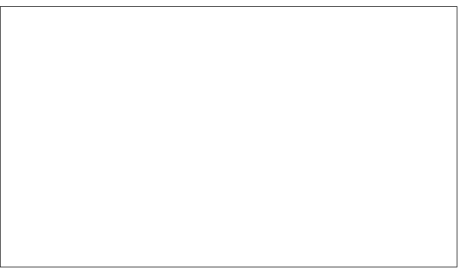


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MISCELLANEOUS RESEARCH AND DEVELOPMENT TASKS FOR 1950 IN GERMANY (SOVIET ZONE)

Ten proposed projects, with their estimated cost and outline of work are noted below. The projects involve: balancing machine, upper-atmospheric physics, mass spectrometer, office machines, spherometer, microphotometer, polychromatic prints, X-ray spectrometer, electron microscope.

Development Proposal No:
0730 Askania VEB Teltow Cost: 70,700 DM
Balancing Machine According to the Elimination Principle

The method of eliminating oscillations, not used until now in balancing techniques, is to be developed after creation of the mathematical bases for the measuring principle. A suitable measuring method will be developed for the determination of the magnitude of unbalance and its phase position. A prototype apparatus is to be built to confirm theoretical data. The construction of balancing machines will make the Eastern zone independent of the West.

0142 German Academy of Sciences, Astronomical Observatory in Sonneberg, Thuringia. Prof Dr Hoffmeister Total Cost: 15,900 DM
Contributions to Physics of the Upper Atmosphere

In particular: investigations of the role of cosmic 'start' ^{Sic. Rays?} Dust? in the behavior of light and weather propagation. Photogrammetric measurements of upper-atmosphere luminescent clouds for determining their altitude and motion. Theoretical and mathematical work for the investigation of the behavior of individual dust particles in the atmosphere. Problems of the origin of cosmic dust in meteor streams and comet nuclei.

0019 Physical Institute of Greifswald University. Prof R. Seelige.
Total cost: 18,000 DM
Development of a special mass spectrograph; investigations of dissociated atoms and negative ions in gas discharges.

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0489 Office Machines, Wanderer Continental VEB, Siegmund-Schoenau (Eggen-Taendler, Gothardt, Gerth). Cost: 200,400 DM
New Adding and Accounting Machines with Complete Keyboard

1. New computing principle and uniform construction for subtraction and subtraction balances in all kinds of computing operations
2. Uniform basic construction for complete and simple keyboards
3. Increased calculating capacity
4. Increased automatic operation
5. Increased operating speed

The machine is to be superior to and capable of competing with American products on the world market. At present, German production of accounting machines is low.

0490 Astra Works VEB, Chemnitz (Harry Ewald) Cost: 210,000 DM
New Simple Keyboard Adding and Accounting Machine

Points 1-5 as above.

1. New computing principle and uniform construction for subtraction in all kinds of computing operations
2. Uniform basic construction for complete and simple keyboards.
3. Increased computing capacity, increased speed, increased automatic operations. Other technical details can be supplied only after conferences with the manufacturer or with the authority placing the order.
2. Machines of this type have been built only in the United States and Germany; at present, the US is the only producer of these machines.
3. This machine, which is to be superior to the American machines, will compete effectively on the world market and thus should be a valuable article for export.

1074 German Academy of Sciences, Optical Institute, Berlin-Karow, Busoinstrasse 27 (Dr Weighans). Cost: ... [blank]
Construction of an Optical Spherometer

The photometric method of measuring the spherical radius of lens surfaces by observation of a ray reflected from the lens surface during rotation about its center; hence the radius must be variable. This method is to be supplemented by the ... [note: blank] of Lau-Krug, which permits circular motions with large radius for small space requirements.

0523 Physical Institute of Humboldt University, Berlin (Prof Ritschl). Cost: 3,000 DM
Design and Construction of a Novel Microphotometer for Quantitative Spectral Analysis

The microphotometer to be developed is based on the measurable attenuation of a comparison light ray. The method is a "zero" method and independent of fluctuations of the light ray. The measuring accuracy and constancy which can be attained are to be determined.

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Equipment for all branches of science and technology working with spectro-analytical methods, especially for the quantitative determination of minute admixtures in alloys, gas mixtures, etc. (Deadline: end of 1950.)

0428 Dresden Institute of Technology, Scientific Photography Institute (Schirmer). Proposed Cost: 20,200 DM
Development of a Method for Making Polychromatic Prints Without Retouching.

On the basis of theoretical findings connected closely with the theory of subtraction color photography, the groundwork is to be laid for the practical application of the masking process for polychromatic prints without retouching.

Use: Simplification of high-grade polychromatic printing processes. (Deadline: end of 1950.)

0402 Physical Institute of Humboldt University (Prof Ritschl)
Proposed Cost: 4,500 DM
Development and Construction of an X-ray Double Spectrograph

Up to now, no focusing X-ray double spectrograph has been built. An apparatus of this kind is to be developed according to a new principle which is based on the combination of a pass crystal and a reflection crystal. For longer waves it is planned to use a combination of two reflection crystals. The efficiency of the method is to be determined. The set is to be used for the performing of X-ray spectrum analyses and for the determination of the size of crystals (metal structure research). (Deadline: end of 1950.)

0403 Physical Institute of Humboldt University, (Prof Ritschl)
Proposed Cost: 8,500 DM
Development and Construction of an Electron Microscope with Photo Cathodes

New investigations in electron microscopy by the method of field emission have resulted in the achieving of a very high degree of magnification. The method is to be made even more effective by use of the photo effect for increasing the electron emission. The increase in efficiency which can be obtained by this method is to be determined in comparison with the previous method.

The equipment is to be used primarily for investigating the structure of metal surfaces. (Deadline for construction and testing of a phototype: end of 1950.)

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