PRÉSERVER
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COLLECTION DE TUBES À DÉCHARGE DE GEISSLER/PLÜCKER

FICHE N° 5038

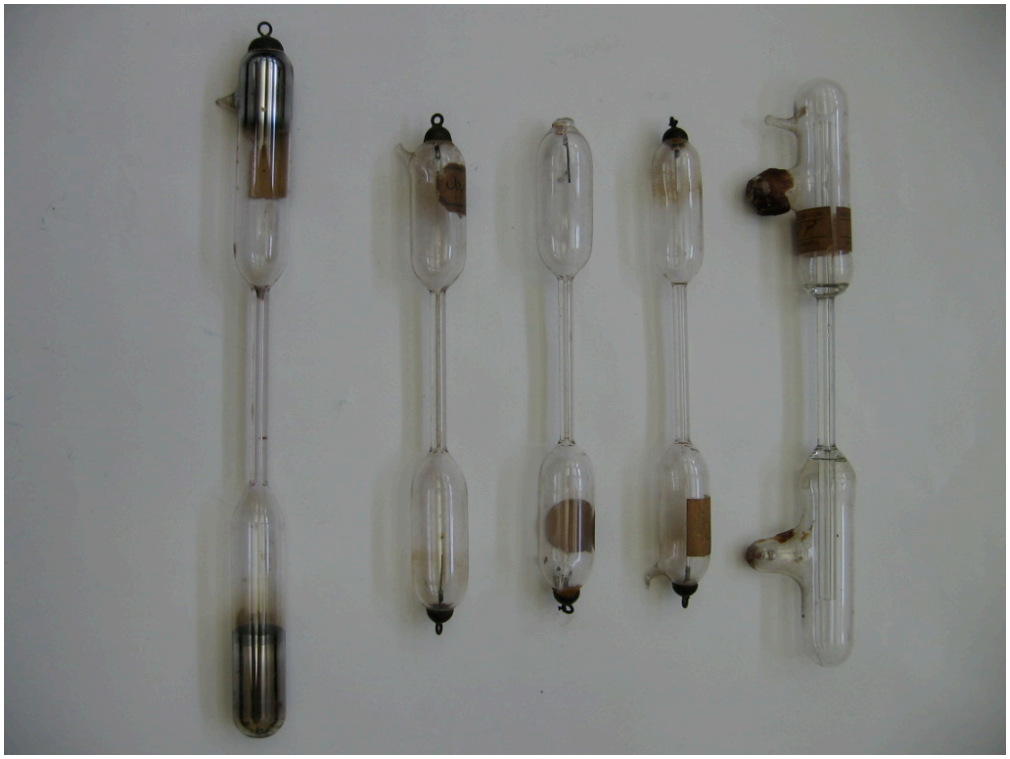
Période de fabrication : 1900-1924
Fabricant : Richard Müller-Uri
Domaines : Physique
Sous-domaines : Electricité, Electrostatique
Organisme : Université de Rennes
Ville : Rennes
Modèle : Geissler-Plucker
Matériaux : Verre, Métal

Description

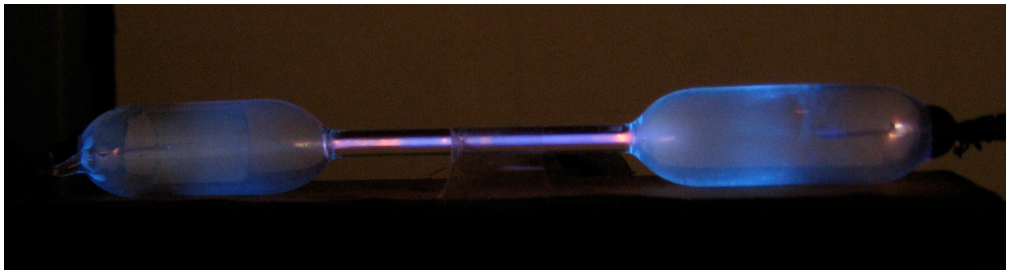
Une quinzaine de ces tubes de Geissler/Mûller ont été retrouvés dans la collection d'instruments scientifiques de la faculté des sciences de Rennes. Ils se présentent sous la forme de petit tube clos en verre de forme allongée avec un cylindre central plus fin. Ils sont pourvus d'un fil métallique soudé dans le verre à chaque extrémité pour servir d'électrode et contiennent différents gaz à faible pression. Certains ont leur nom indiqué sur une étiquette : deux à l'azote (N), un à l'Hydrogène (H), un inconnu (T1) et de nombreux non marqués.
Les inventaires de Physique de l'Université de Rennes indique de nombreux achats dans la période 1895-1909, mais il est très difficile de reconnaître les tubes. Sur les constructeurs ou vendeurs, on a cependant quelques données :
- Une étiquette retrouvée indique " RICH. MüLLER-URI , BRAUNSCWEIG" et la lettre h (Hydrogène). Il s'agit du constructeur Richard Mu?ller-Uri, verrier et fabricant allemand d'instruments scientifiques de la fin du XIX ème siècle et du début du XX ème , qui était célèbre pour ses tubes de Geissler, de Plu?cker, de Crookes et de Puluj. Il fournissait la plupart des établissements d'enseignement supérieur à travers le monde.
- Sur les vendeurs, on retrouve R.Ch. Heller (1907-1908), à Paris, représentant de la grande firme allemande Max Kohl-Chemnitz.
- On retrouve aussi la SCPC (Société Centrale de Produits Chimiques-1909) qui travaillait avec Pierre et Marie Curie.

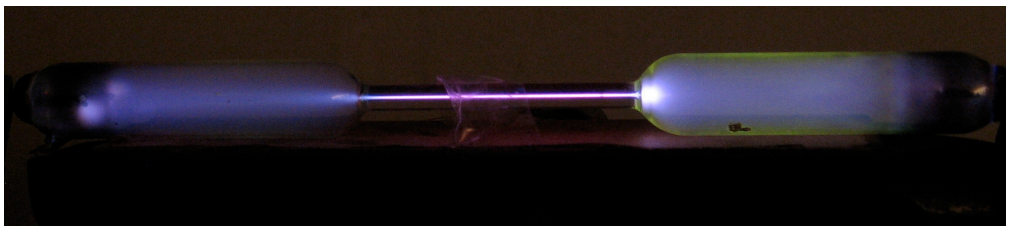
Utilisation

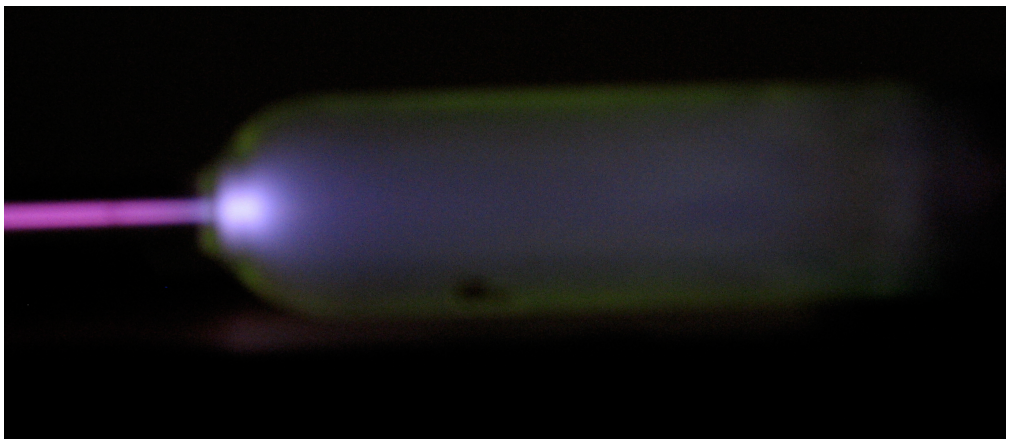
Alimenté par une haute tension fournie par exemple par une bobine de Ruhmkorff, ces tubes à décharge produisent un éclair lumineux dont la couleur change avec la nature du gaz qui le remplit. Dans lescexemples présentés, on a un rayonnement de couleur bleu clair et jaune. Les tubes étaient probablement utilisés en manipulation de cours d'électricité à la faculté des Sciences de Rennes. Certains fonctionnent encore parfaitement et ont fait l'objet de film-vidéo. bien qu'étant acheté probablement avant 1895.Ils servent à montrer les effets lumineux obtenus par décharge électrique dans les gaz raréfiés. Les lueurs obtenues sont de différentes couleur selon la nature du gaz avec des parties brillantes et obscures.
C'est le physicien allemand Heinrich Geissler (1815-1879) qui, vers 1850, réalise les premiers tubes de verre de ce type. Il étudie les décharges lumineuses dans différents gaz et à diverses pressions. Ce genre de tube sont parfois appelés tubes de Julius Plücker (1801-1868) autre physicien allemand.




Azote
Iode
azote








ICH. MÜLLER-URI
H.
BRAUNSCHWEIG

RICHARD MÜLLER-URI

Braunschweig

GERMANY

Schleinitzstrasse 19

Telegrams:
MÜLLERURI BRAUNSCHWEIG

PARIS 1900 Silver Medal

ST. LOUIS 1904

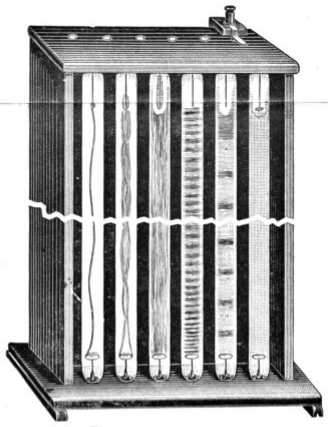
BRUSSELS: DIPLOMA OF HONOUR AND GRAND PRIZE

PARIS 1900 Silver Medal

ST. LOUIS 1904

Chemical and physical laboratories and museums completely equipped.
Chemical, physical and Meteorological Apparatus, Instruments and Supplies.
Technical Glass Works. Speciality: Precision Work. Vacuum and Discharge Apparatus.

Almost fifteen years ago I placed on the market, as a novelty, the **Original Vacuum Scale according** to Cross, this apparatus forming a valuable addition to the equipment of physical museums, etc.



8002 extralarge model.

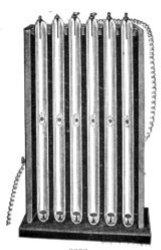
As is the case with every other successful device which has attained general recognition, my original vacuum scale has been subject to a great many imitations after having been condemned at the outset as superfluous and useless. Such imitations, as far as they may be considered of use at all, are incorrect in many instances as regards the construction or arrangement. In most of them the desire has been to secure a lower price; thus the tubes are often too small and narrow, and defective from a technical point of view. The stands are in a great many cases complicated and therefore expensive; they present every degree of unsuitability, and the insulation is always defective.

My original patterns are constructed as the result of very wide experience, and the resultant apparatus are carried out with the greatest possible care and perfection; and the excellent arrangement of mounting has been shown by the fact that damage has never been reported in any consignment, even when this has been made to the most remote oversea towns.

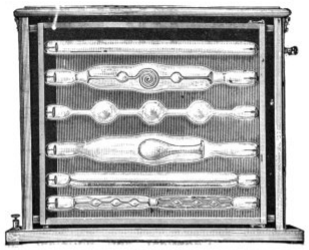
I have been able to determine whenever I have made a comparison, that the cheap imitations are very often quite unsuitable (false vacua, work too light), while the better patterns are relatively considerably more expensive than my standard patterns.

Owing to the introduction of the most perfect arrangements and methods of working, and by constructing the apparatus in large series, it has been possible to effect a considerable decrease in price even in the case of the best constructed and higher class instruments. In bringing these few remarks to the notice of my clients, I would mention that a preference is nearly always shown now for pattern No. 8001 for successive lighting, while for large audiences No. 8002 (the extra large pattern) is practically always used.

Please look for the complete lists of Geissler Tubes, and High Vacuum Tubes after Crookes, Braun, Thomson, Wehnelt etc. in Catalogue 1909 VIIth ed. and notices No. 61 to 75.


8000

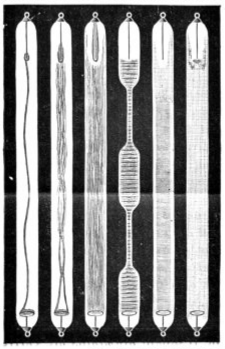

8001


8116. 7. 8.

Original Vacuum Scales.

Charles R. Cross's.

(Weinholds physikalische Demonstrationen, 3rd edition; Zeitschrift für den physikalischen und chemischen Unterricht XII., No. 4.)



The Cross **Vacuum Scale** produces in its six 50 cm high vacuum tubes (in the extra large pattern the tubes are 120 cm high) a clear image of the luminous phenomena connected with progressive evacuation of the air, these phenomena being observed in the tubes connected to the working pump; and since one end is fitted with a disc electrode and the other with a pin electrode, it is possible also to demonstrate those interesting luminous phenomena at the poles. The following stages of evacuation and their characteristic phenomena have been laid down:

1st	Stage,	40	mm	pressure: luminous thread, as in de la Rive's apparatus;
2nd	„	10	„	„ resolution of same, luminous band;
3rd	„	6	„	„ Geissler tube with the homogeneous light;
4th	„	3	„	„ tube with stratified light, Gassiot's cascades;
5th	„	0,14	„	„ Tesla light and columnar stratifications;
6th	„	0,03	„	„ glass-fluorescence, Röntgen or Crookes' vacuum.

My **Original Vacuum Scale** is at present constructed in two sizes: (1) with tubes 50 cm long (standard pattern); (2) with tubes 120 cm long (extra large type). The standard size is built both for simultaneous or progressive illumination; and the extra large pattern only with contact slides for successive illumination.

8000 **Original Vacuum Scale** after Chas. R. Cross; with special stand; for simultaneous lighting; Standard Size; tubes 50 cm long . . . . . £ 1. 18. 0.

8001 — **Vacuum Scale** after Chas. R. Cross, on special stand: Standard Size; tubes 50 cm long; with arrangement for lighting up the tubes successively . . . . . £ 2. 8. 0.

8002 — **Vacuum Scale** after Cross, extra large; with special sliding contacts; tubes 120 cm high and very wide . . . . . £ 5. 10. 0.

The tubes in No 8002 are 120 cm high by about 6 cm wide, thus rendering the luminous phenomena perceptible to the normal eye even to the most distant place in a large auditorium. The stand is of massive construction, and the tubes are lighted up successively by means of two sliding contacts. The changing over of the tubes is, in spite of the considerable height of the apparatus effected easily and without trouble.

Standard Sets of Geissler Tubes in upright Cases.

A year after the appearance of Cross's vacuum scale I elaborated (1899) my **Standard Series of Geissler Tubes** which I named **„The Compendium"**, and which to-day may be considered as one of the most widely used apparatus of this type. In this case also, thanks to the practical arrangement of mounting, even the glazed cases have never suffered damage even when sent to the most outlying places.

By the introduction of my „Compendium" Standard Series of Geissler Tubes, the necessity for a number of special types of Geissler tubes has been done away with. It is only possible by using a practically combined apparatus of this type to fully utilise the brief period generally available for demonstration purposes. This innovation has met with universal approval by virtue of the possibility of demonstrating quickly and simultaneously the typical classes of Geissler tube. These sets supply the six typical representatives of the types used for teaching purposes, thus avoiding repetitions and carefully indicating the special type. All three sizes are built into glazed dustproof upright cases as figured.

If desired, external terminals are fitted for each individual tube and the terminals fitted with connecting pieces, thus rendering it possible to light up individual tubes or a number of tubes.

The series comprises the following types of tubes:

Tube 1. Straight cylindrical tube with homogeneous Nitrogen-light.
Tube 2. Tube with uranium glass spiral and capillary lengths; shows glass-fluorescence and increase of luminous [intensity by constriction.
Tube 3. Tube with several globes with luminescent gas, Sulphurous Acid.
Tube 4. Compound tube with 2 different pure gases, e. g., N and CO_2 and with stratified light.
Tube 5. Tube with luminescent pulverulent substance — phosphorescence.
Tube 6. Tube with alcoholic solutions — fluorescence.

8116 **„Compendium" Series of Geissler Tubes,** standard size, with tubes 40 cm length; external measurements 50:45:20 cm £ 3. —.—

8117 — idem, **smaller pattern,** otherwise same as before, with tubes 30 cm length, external dimensions 40:35:16 cm £ 2. 5. 0.

8118 — idem, **extra large pattern,** with tubes fully 60 cm long, these being specially beautiful and massively worked specimens, sufficient for demonstrating to the largest audiences. External dimensions of case 80:60:25 cm £ 5. 12. 0.

Pour nous citer :
Base de la Mission nationale de sauvegarde et de valorisation du patrimoine scientifique et technique contemporain, PATSTEC, Collection de tubes à décharge de Geissler/Plücker (Richard Müller-Uri), https://www.patstec.fr/ressources/objets/detail?id=31063, consulté le 2026-07-24