

Hokkai Photoelectron Co. Ltd.

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Hokkai PEEM Co. Ltd. <http://eost.y7.net/Hpeem/HPeem1.html> treats various attachments for PEEM, analytical instruments for electron beam equipments (LEEM/PEEM, TEM/STEM and SEM). Hokkai PEEM Co. Ltd. has various connections to FLUKE, Hayasaka Riko, Sun Technologies, Suga Products and JEOL and sales some of their equipments.

90 degree deflection Spin manipulator

Spin is an important character of electrons. In recent years, various equipments require spin. Spin manipulator rotates the spin in the plane including the beam axis. 90 degree deflection type spin manipulator has crossed magnetic and electrostatic fields acting as deflectors. When the magnetic deflector is active, electron spins are rotate same as the rotation of electrons as shown in Fig. 1. However, when the electrostatic deflector is active, electrons are deflected 90 degrees, but the spin stays the same direction as before. As a result, spin rotates its direction relative to the beam axis only when the electrostatic deflector is active. When the magnetic deflector is active, the spin direction does not change its direction relative to the beam axis. If we excite both fields to make totally 90 degree rotation, we can rotate the spin in any angles. This is the principle of the spin manipulator.

Our model of the spin manipulator magnet was built with the circular pole-pieces. In this case, high magnetic homogeneity can be attained and the beam axis for the magnet deflection can be coincided with the electrostatic deflection. So that, the beam can be obtained very easily in the experiment.

FLUKE Radioactive Survey Meter

Fig.3 is a radioactive survey meter(451B) to check as if your road, foods, and any other materials are radioactively contaminated or not. The meter is made of S.T.JAPANINC and we are distributing through FLUKE Co. Ltd. This meter is working under battery power and small, handy size, then you can use any place. It has a function of automatic change of scale. So that, even the place you are cheking has a large amount of radiation or quite small, you can read the value accurately in any range. It can measure not only γ -ray, but also automatically change its range to β -ray and X-ray.

FLUKE thermograph

Fig. 4 shows a Fluke's handy thermograph to show temperature distribution as an image. It can measure temperature distribution from outside without touching.

JEOL ESCA, SEM and attachments

Fig. 5 shows "Review PEEM" made in Hokkaido attached to JEOL ESCA. It can measure chemical information within magnified image.

Fig.6 shows desktop SEM NeoScope JCM-5000. It is small, easy operation SEM. You can rotate and tilt your specimen up to the 70mm diameter and 50mm height specimen for the observation. Any specimen can be seen without special treatment.

Fig. 7 shows an attachment for SEM; specimen dry up equipment. It is useful to see a wet specimen drying up to set inside SEM.

Suga Products thin film evaporator

Fig. 8 shows YAM (ALD equipment) developed by Suga Product to produce a insulator film, an organic electroluminescence passivation film (sealing film), a protection film, an oxide film and etc. An atomic-layer-deposition method is a technique known for many years, and is equipment made to deposit one atomic layer by one atomic layer.

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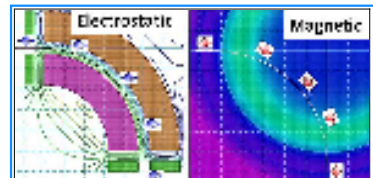


Fig.1. Principle of 90 degree deflection type spin rotator

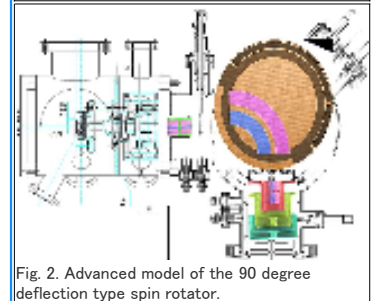


Fig. 2. Advanced model of the 90 degree deflection type spin rotator.



Fig. 3. FLUKE survey meter 451B type can measure radioactive contamination including beta-ray, gamma-ray and X-ray.



Fig.4. FLUKE thermograph to measure temperature without touching.



Fig.5. Collaborating with JEOL. "Review PEEM".



Fig.8. Suga Product Thin film evaporator.



Fig.6. JEOL desktop SEM, "Neo Scope" JCM5000, Agency in Hokkaido "Hayasaka Riko Co. Ltd."

Fig.7. Sun Technologies, Specimen dry equipment for SEM