

Title (en)  
Dilution cryostat.

Title (de)  
Mischkryostat.

Title (fr)  
Cryostat à dilution.

Publication  
**EP 0188976 A1 19860730 (FR)**

Application  
**EP 85420228 A 19851216**

Priority  
FR 8419488 A 19841217

Abstract (en)  
[origin: US4672823A] A 3He-4He dilution cryostat is provided in which a series of concentric dismountable enclosures permit ready disassembly for servicing and sample changing, and in which a secondary pumping circuit and a secondary cryogenic material delivery circuit provide rapid and convenient internal cooling of the dilution chamber by means of cooled cryogenic material, the dilution chamber being subsequently filled with the same cryogenic material in the liquified state. More particularly, the cryostat possesses a primary pumping circuit by which a 3He-4He mixture is forced through cooling elements to liquify it, transferred into the dilution chamber and an associated evaporator, and the 3He finally recycled. A secondary pumping circuit includes a second evaporator connected to the dilution chamber, tubing connecting this evaporator with the tubing leading to the inlet side of a pump in the principal pumping circuit, and a valve located between the second evaporator and the tubing of the principal pumping circuit. A secondary cryogenic material delivery circuit includes heat exchanging elements connected in series between the pump of the principal pumping circuit and the tubing of the secondary pumping circuit, permitting cooled cryogenic material to be introduced into the first and second evaporators and the dilution chamber to cool them prior to filling them with liquified cryogenic material.

Abstract (fr)  
Le cryostat à dilution comprend: - un circuit de pompage dérivé (53) comportant un évaporateur (54) et une vanne (57) placés entre la chambre de dilution (44) et la pompe de circulation (46) faisant partie du circuit principal de pompage et refoulement, - et un circuit de refoulement dérivé (58) contrôlé au-delà de la pompe par une vanne d'admission (59), passant par les premier et second étages (2, 3) et aboutissant dans le circuit de pompage dérivé (53) en aval de l'évaporateur par rapport à la chambre de dilution. Application à l'analyse de matériaux supra-conducteurs.

IPC 1-7  
**F25B 23/00**

IPC 8 full level  
**F17C 3/08** (2006.01); **F25B 9/00** (2006.01); **F25B 9/02** (2006.01); **F25B 9/12** (2006.01); **F25D 3/10** (2006.01)

CPC (source: EP US)  
**F17C 3/085** (2013.01 - EP US); **F25B 9/12** (2013.01 - EP US); **F17C 2270/0518** (2013.01 - EP US); **F25D 2400/28** (2013.01 - EP US)

Citation (search report)  
• [A] US 4459828 A 19840717 - ROSENBAUM RALPH L [IL]  
• [A] EP 0015728 A1 19800917 - AIR PROD & CHEM [US]  
• [A] DE 2744346 A1 19790405 - BINNIG GERD

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