

Title (en)
Laminated lightweight radiation shielding materials

Title (de)
Mehrschicht-Leichtbau-Strahlenschutzstruktur

Title (fr)
Couverture de protection contre les radiations composée de couches stratifiées et de poids réduit

Publication
EP 1120795 A1 20010801 (EN)

Application
EP 01300625 A 20010124

Priority
US 48963500 A 20000124

Abstract (en)
Laminated materials or structures that provide radiation shielding for spacecraft components in an orbiting spacecraft against electron and proton radiation. The laminated materials or structures have three laminated layers. The first layer (11) is made of one or more materials having a low Z/A (atomic number/atomic weight) ratio that preferentially attenuates electron and proton radiation, although they may generate Bremsstrahlung radiation in the process. The second layer (12) is made of one or more materials with a high Z^2/A (atomic number squared/atomic weight) ratio that preferentially attenuate Bremsstrahlung radiation, although the materials may generate photo-electrons in the process. The third layer (13) is made of one or more materials having a low Z/A (atomic number/atomic weight) ratio that attenuate photo-electrons emitted from the second layer, as well as electrons and protons that pass through the first and second layers. <IMAGE>

IPC 1-7
G21F 1/10; **G21F 1/12**

IPC 8 full level
G21F 1/10 (2006.01); **G21F 1/12** (2006.01)

CPC (source: EP)
G21F 1/106 (2013.01); **G21F 1/125** (2013.01)

Citation (search report)

- [A] US 4923741 A 19900508 - KOSMO JOSEPH J [US], et al
- [DA] US 5324952 A 19940628 - CUMMINGS BRENT C [US]
- [DA] EP 0242295 A1 19871021 - AEROSPATIALE [FR]
- [DA] SPIETH B D ET AL: "Shielding electronics behind composite structures", 1998 IEEE NUCLEAR AND SPACE RADIATION EFFECTS CONFERENCE (NSREC'98), NEWPORT BEACH, CA, USA, 20-24 JULY 1998, vol. 45, no. 6, pt.1, IEEE Transactions on Nuclear Science, Dec. 1998, IEEE, USA, pages 2752 - 2757, XP002163551, ISSN: 0018-9499

Cited by
GB2593530A; CN102479562A; CN103971776A; CZ307676B6; US11358375B1; WO2015113160A1; US9640288B1

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