

(12) 按照专利合作条约所公布的国际申请

(19) 世界知识产权组织  
国际局



(10) 国际公布号  
**WO 2024/169847 A1**

(43) 国际公布日  
2024 年 8 月 22 日 (22.08.2024)

(51) 国际专利分类号:  
*G01N 23/20008* (2018.01) *G01V 5/00* (2024.01)  
*G01N 23/203* (2006.01)

(21) 国际申请号: PCT/CN2024/076604

(22) 国际申请日: 2024 年 2 月 7 日 (07.02.2024)

(25) 申请语言: 中文

(26) 公布语言: 中文

(30) 优先权:  
202310112882.X 2023 年 2 月 15 日 (15.02.2023) CN

(71) 申请人: 同方威视技术股份有限公司 (NUCTECH COMPANY LIMITED) [CN/CN]; 中国北京市海淀区双清路同方大厦 A 座 2 层, Beijing 100084 (CN)。

(72) 发明人: 迟豪杰 (CHI, Haojie); 中国北京市海淀区双清路同方大厦 A 座 2 层, Beijing 100084 (CN)。宗春光 (ZONG, Chunguang); 中国北京市海淀区双清路同方大厦 A 座 2 层, Beijing 100084 (CN)。刘必成 (LIU, Bicheng); 中国北京市海淀区双清路同方大厦 A 座 2 层, Beijing 100084 (CN)。郭俊伟 (GUO, Junwei); 中国北京市海淀区双清路同方大厦 A 座 2 层, Beijing 100084 (CN)。曹金国 (CAO, Jinguo); 中国北京市海淀区双清路同方大厦 A 座 2 层, Beijing 100084 (CN)。刘磊 (LIU, Lei); 中国北京市海淀区双清路同方大厦 A 座 2 层, Beijing 100084 (CN)。季峥 (JI, Zheng); 中国北京市海淀区双清路同方大厦 A 座 2 层, Beijing 100084 (CN)。王伟珍 (WANG, Weizhen); 中国北京市海淀区双清路同方大厦 A 座 2 层, Beijing 100084 (CN)。

(54) **Title:** BACK SCATTERING INSPECTION DEVICE FOR INSPECTING M-LAYER STRUCTURED OBJECT UNDER INSPECTION

(54) 发明名称: 用于检测 m 层结构被检物的背散射检查装置

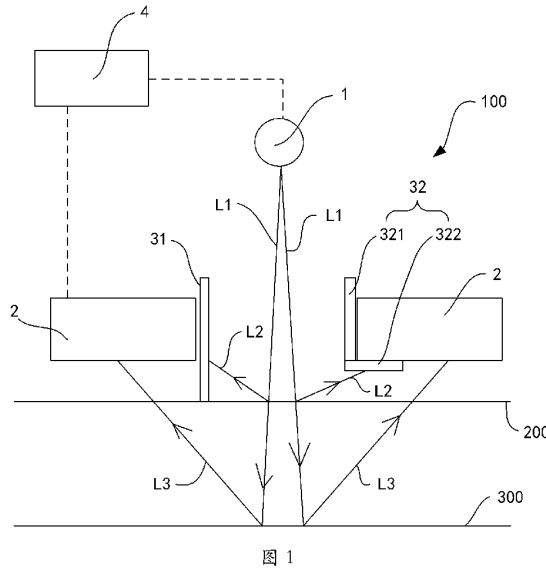


图 1

(57) **Abstract:** The present disclosure provides a back scattering inspection device for inspecting an m-layer structured object under inspection, applied to the technical field of detection. The m-layer structured object under inspection at least comprises an outer-layer structure and an inner-layer structure, m being an integer greater than or equal to 2; the back scattering inspection device comprises a ray generator, n detectors, and a shielding assembly; the ray generator is arranged above the outer-layer structure and is configured to emit incident rays toward the m-layer structured object under inspection; the n detectors are arranged above the outer-layer structure

[见续页]

(74) 代理人: 中科专利商标代理有限责任公司(CHINA SCIENCE PATENT & TRADEMARK AGENT LTD.); 中国北京市海淀区西三环北路 87 号 4-312 室, Beijing 100089 (CN)。

(81) 指定国(除另有指明, 要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW。

(84) 指定国(除另有指明, 要求每一种可提供的地区保护): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), 欧亚 (AM, AZ, BY, KG, KZ, RU, TJ, TM), 欧洲 (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG)。

本国际公布:

— 包括国际检索报告(条约第21条(3))。

and located in the circumferential direction of the incident rays, so as to receive inner-layer scattered rays scattered from the incident rays directed onto the inner-layer structure,  $n$  being an integer greater than or equal to 1; the shielding assembly is configured to at least partially surround the detectors, so as to prevent some of the incident rays from being directed onto the detectors and prevent outer-layer scattered rays scattered from the incident rays directed onto the outer-layer structure from being directed onto the detectors.

(57) 摘要: 本公开提供了一种用于检测 $m$ 层结构被检物的背散射检查装置, 应用于探测技术领域,  $m$ 层结构被检物至少包括外层结构体和内层结构体,  $m$ 为大于等于2的整数, 背散射检查装置包括射线发生器、 $n$ 个探测器和屏蔽组件, 射线发生器设于外层结构体的上方, 被构造为向 $m$ 层结构被检物发射入射射线;  $n$ 个探测器设于外层结构体的上方, 且位于入射射线的周向方向上, 以接收入射射线射在内层结构体上散射的内层散射射线,  $n$ 为大于等于1的整数; 屏蔽组件被构造为至少部分包围探测器, 以遮挡部分入射射线射至探测器, 和遮挡入射射线射在外层结构体上散射的外层散射射线射至探测器。