山东黄河北煤田石炭—二叠系太原组地层沉积特征

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中文摘要:为了研究黄河北煤田的沉积特征，查清研究区内太原组地层的岩性类型、沉积构造、粒度分布特征，并进一步明确其沉积体系及沉积相的特征和沉积演化，本文根据野外露头的观察和室内岩心的描述、薄片分析，结合钻井、测井资料，运用沉积学、古生物地层学、层序地层学、岩石粒度分析等方法,对研究区的太原组地层沉积特征进行了详细的研究。结果表明：研究区石炭—二叠系的含煤地层太原组沉积物中砂岩、粉砂岩、泥岩、石灰岩及煤岩均较发育，常见的含铁矿物主要是褐铁矿、黄铁矿、菱铁矿等；主要层理构造有水平层理、平行层理、交错层理、波状层理、韵律层理等，生物扰动构造非常发育；主要的生物化石发育于台地相灰岩中，包括蜓类、牙形石等个体较大化石；主要发育植物化石有轮叶、科达木、宽带羊齿等；太原组沉积环境比较动荡，为河流相或者浅海相环境，其陆表海盆地层序及内部单元的典型界面有最大海泛面、区域性海退界面和最大海退面，并依据其不同界面，进行了沉积相划分和层序地层分析；研究区内晚石炭世的太原组地层为陆表海沉积序列，其沉积环境演化主要是由海陆交互相沉积向陆相沉积的转换。

中文关键词:黄河北煤田 太原组 沉积环境 沉积相 粒度分析

Depositional Characteristics of Carboniferous-Permian Taiyuan Formation in Huanghebei Coalfield, Shandong Province

Abstract:In order to study the depositional features of the Huanghebei Coalfield,determined the type of stratigraphic lithology,sedimentary structure and the particle size distribution of Taiyuan Formation in the study area,and reveal sedimentary evolution of the sedimentary system and sedimentary facies,the authors made detailed investigations into the stratigraphic depositional feaures of Taiyuan Formation.Through the observation of field outcrop and description of drill cores and thin-section analysis,combined with drill data and well-log information,the authors used such means as sedimentology,paleobiology,stratigraphy,sequence stratigraphy and grading analysis to perform the study.The result shows that the Taiyuan Formation has abundant medium-grained sandstone,siltstone,mudstone,limestone and coal seam in the Carboniferous-Permian coal-bearing strata,and the iron-bearing minerals are mainly limonite,pyrite and siderite.Main bedding structures include horizontal bedding,parallel bedding,cross bedding,current bedding and rhythmical bedding.Bioturbate structure is well developed.Main oryctocoenose preserved in limestone of platform facies includes various types of large bodies,such as Schwagerina subnathorsti(Lee),S.sp.,Streptognathodus elongutes,Hindeodus sp.,and Anchignathodus sp.The plant fossils are Annularia sp.,Cordaites sp.,and Taeniopteris nystroemii.Sedimentary environment of Taiyuan Formation is instable,and is mainly a river facies and shallow sea facies environment.The typical surface of stratigraphic sequence and units of continental sea are of three kinds,i.e.,the largest marine flood surface,the regression surface of the area,and the largest regression surface.According to different surfaces,the depositional facies division and the analysis of strata sequence were completed.Strata of Late Carboniferous Taiyuan Formation are of the continental sea sedimentary sequence.The sedimentary environment was converted from paralic deposition to continental deposition.

keywords:Huanghebei coalfield Taiyuan Formation depositional condition depositional facies analyzing grain size

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