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《中国工程院战略咨询项目信息参考》是中国工程科技知识中心提供的一项信息推送服务，该服务组织专业团队，基于中国工程科技知识中心地理资源与生态专业分中心在工程科技领域积累的数据资源，面向战略咨询研究项目需求提供信息的搜集、整理、加工、推送服务。

该信息参考面向院士专家开放订阅，每两周一期，欢迎订阅。



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【动态信息】

1. 标题：农业高质量发展成效显著 农业科技进步贡献率达 62.4%

【央视网】央视网消息：《中国农业展望报告（2023—2032）》4月20日上午发布。2023年的《展望报告》总结回顾了18种主要农产品2022年市场形势。

链接：

<https://news.cctv.com/2023/04/20/ARTIBiKRhYcop1PcKVNNCTwy230420.shtml>

2. 标题：农业农村部：加快建设农业强国 促进农民农村共同富裕

【央视网】央视网消息：4月20日10时，国务院新闻办公室举行新闻发布会，介绍2023年一季度农业农村经济运行情况，并答记者问。

链接：

<https://news.cctv.com/2023/04/20/ARTI2W3UvipD6sG7xC2kuznU230420.shtml>

3. 标题：陕西定边县：电力赋能智慧农业种植

【中经社】春阳抚照，万物滋荣，正值春耕春种的大好时节，也是蔬菜种苗培育的关键时期。在陕西省榆林市定边县沃野农业开发有限公司育苗间，一台四五米长的全自动播种流水线上，一个个完整的育秧盘成品正在源源不断地“诞生”。

链接：http://sn.news.cn/2023-04/13/c_1129519125.htm

4. 标题：农业农村经济运行势头良好

【科技日报】总的看，一季度我国农业农村经济运行保持良好发展势头，为稳增长、稳就业、稳物价提供有力支撑。”在国新办20日举行的一季度农业农村经济运行情况新闻发布会上，农业农村部总农艺师、发展规划司司长曾衍德表示。

链接：

http://digitalpaper.stdaily.com/http_www.kjrb.com/kjrb/html/2023-04/21/content_552301.htm?div=-1

【文献速递】

1. Accelerated alloy discovery using synthetic data generation and data mining

作者：Rangasayee Kannan, Peeyush Nandwana

文献源：Scripta Materialia, 2023

摘要：The search for new alloys with improved properties is never ending with infinite combinations and amounts of alloying elements in the alloy. Advancements in machine learning have made navigating this enormous search space feasible. However, training the machine learning models and tuning their hyper-parameters to make accurate predictions can be time-consuming and often require high-performance computing resources. Furthermore, the quality of the predictions depend on the availability of sufficient training data. Here, we present a generic approach to accelerate alloy discovery by coupling high throughput CALPHAD calculations, synthetic data generation, and data mining. As a demonstration of the approach, we design super bainitic steels that form bainite at 200°C in lower transformation times.

2. Development of IoT Cloud-based Platform for Smart Farming in the Sub-Saharan Africa with Implementation of Smart-irrigation as Test-Case

作者：Supreme Ayewoh Okoh

文献源：International Journal of Information Technology and Computer Science(IJITCS)., 2023

摘要：UN Department of Economics and Social Affairs predicted that the world population will increase by 2 billion in 2050 with over 50% from the Sub-Saharan Africa (SSA). Considering the level of poverty and food insecurity in the region, there is an urgent need for a sustainable increase in agricultural produce. However, farming approach in the region is primarily traditional. Traditional farming is characterized by high labor costs, low production, and under/oversupply of farm inputs. All these factors make farming unappealing to many. The use of digital technologies such as broadband, Internet of Things (IoT), Cloud computing, and Big Data Analytics promise improved returns on agricultural investments and could make farming appealing even to the youth.

However, initial cost of smart farming could be high. Therefore, development of a dedicated IoT cloud-based platform is imperative. Then farmers could subscribe and have their farms managed on the platform. It should be noted that majority of farmers in SSA are smallholders who are poor, uneducated, and live in rural areas but produce about 80% of the food. They majorly use 2G phones, which are not internet enabled. These peculiarities must be factored into the design of any functional IoT platform that would serve this group. This paper presents the development of such a platform, which was tested with smart irrigation of maize crops in a testbed. Besides the convenience provided by the smart system, it recorded irrigation water saving of over 36% compared to the control method which demonstrates how irrigation is done traditionally.

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