

Criminal Sanctions Against Money Laundering Crimes in the Perspective of Economic Analysis of Law

Fauzi Yunandi¹  Arrum Budi Leksono² 

¹Sekolah Tinggi Ilmu Hukum IBLAM, Indonesia

²Sekolah Tinggi Ilmu Hukum IBLAM, Indonesia

ABSTRACT

Background. Money laundering as a crime in the economic sphere shows that crime is a consequence of economic activity and sustainable development, which is a challenge for the state. Money laundering is the disguise or attempt to disguise the origin of profits from illegal or legitimate activities.

Purpose. The purpose of this research is to analyze the money laundering law "criminal sanctions against money laundering crimes" from the point of view of economic analysis.

Method. The research was carried out using a normative juridical approach and an empirical approach. The data used in this study were secondary data obtained from library materials, and field research was carried out by observation and interviews (interviews). The data obtained were analyzed qualitatively and juridically and deductively concluded.

Results. The use of Bitcoin as a money laundering tool is rapidly increasing worldwide with the development of technology and Industry 4.0, according to Dean Ediana Ray, Director of the Financial Transaction Reports and Analysis Center (PPATK). In Indonesia, money laundering was initially regulated under Law No. 8 of 2010 on the Prevention and Eradication of Money Laundering.

Conclusion. The normative legal approach focuses on analyzing legal normative systems such as principles, norms, legal rules, court decisions and principles.

KEYWORDS

Comparison, Rehabilitation, Narcotics Abuse

Citation: Yunaidi, F., Leksono, B, A. (2023). Criminal Sanctions Against Money Laundering Crimes in the Perspective of Economic Analysis of Law. *Rechtsnormen Journal of Law* 1(2), 77–84.

<https://doi.org/10.55849/rjl.v1i2.391>

Correspondence:

Fauzi Yunandi,
fauziyunadi@iblam.ac.id

Received: December 12, 2023

Accepted: December 15, 2023

Published: December 31, 2023

INTRODUCTION

Money laundering, as a crime in the economic realm, that criminality is the result of economic development which then becomes a challenge for the state. As a form of economic crime that is included in the category of organized crime (Di Vaio dkk., 2020), Money Laundering is a serious crime and a problem that has received global attention, including Indonesia (Coppola dkk., 2019). The practice of Money Laundering has a serious impact in Indonesia, because in addition to harming the community, it has the potential to damage the stability of the national economy and state finances by increasing various crimes (Y. Yang dkk., 2019). Money Laundering is an attempt to hide profits obtained from illegal activities through legitimate activities (Paul dkk., 2021). Thus, Money



Laundering is a follow-up action to the original crime that occurred previously. The goal is to hide or obscure the proceeds of crime, briefly known as money laundering (Pratama, 2022).

Criminals often invest the profits gained from their crimes in various legal companies, for example by buying shares in the stock market of companies that have legal qualifications in their business. Criminals' wealth through such a process appears to be a legal or legitimate activity (Chandrasekar dkk., 2020). Because of this, money laundering is difficult to detect (Morel dkk., 2020). The difficulty of detecting money laundering or its consequences is due to the different methods used by criminals, which make the detection of money laundering more difficult. Criminals use various money laundering methods such as capital collaboration, loan guarantees, overseas travel, disguised domestic transactions, disguised gambling, disguised documents, overseas loans, and overseas planning loans (W.-Y. Yang dkk., 2019). The perpetrators of the offense The crime of money laundering is taking a new path in the age of technology, namely the use of virtual money or cryptocurrency. Cryptocurrency is a new money laundering method because it uses fake signatures and identities to hide virtual currency funds and transaction information (Luque dkk., 2019). These currencies actually have no physical form and are created through information technology. Bitcoin is one of the dominant international cryptocurrencies today.

According to Dian Ediana Rae, Director of the Financial Transaction Reports and Analysis Center (PPATK), the use of Bitcoin as a form of money laundering has grown rapidly around the world with the development of technology and Industry 4.0. (Dian Ediana Rae, 2021). This condition is considered an emerging threat, and the abuse of cryptocurrency as a means of money laundering in Indonesia has increased since 2015, making it a new practice in Indonesia. (Pratama, 2022). In Indonesia, money laundering was initially regulated by Law No. 15 of 2002. Later amendments were made to Law No. 25/2003, which amended Law No. 15/2002. In 2010, the law was replaced by Law No. 8/2010 on the Prevention and Eradication of Money Laundering. This was done to adapt to changing needs, practices and international law enforcement standards. (Pratama, 2022).

According to the International Monetary Fund (IMF), estimates of the total volume of global money laundering vary between two and five percent of global gross domestic product. Based on data from 1996, these percentages suggest that the amount laundered ranges from \$590 billion to \$1.5 trillion (Reichstein dkk., 2019). At the same time, the Financial Action Task Force on Money Laundering (FATF) estimates that between \$60 billion and \$80 billion is laundered annually in the European and North American financial systems.

According to a PPATK report, from January 2005 to January 2021, the Court has decided 556 Money Laundering cases. Most of the court decisions related to these cases were issued by Courts in the DKI Jakarta area, including the District Court/Corruption Court, High Court, and/or Supreme Court (Stuart dkk., 2019). The number of decisions in the region reached 177 or around 31.8% of the total. Furthermore, most of the court decisions in Money Laundering cases are related to narcotics crimes, with 143 decisions or around 25.7% of the total (Nosyk dkk., 2021). The maximum punishment that can be given is life imprisonment and a maximum fine of 32 billion rupiah.

In the case of money laundering, the total value of criminal proceeds in 2016-2018 was IDR 8,468,132,842,404 (Callhoff dkk., 2020). This amount consists of the proceeds of drug crimes of Rp. 7,658,483,983,829 with a percentage of 90.4%, the proceeds of bank crimes of Rp. 501,355,181,497 rupiah with a percentage of 6% and the profits of corruption crimes of Rp. 308,293,83.67% with interest.

The significant impact of money laundering and the increasing trend of new modes of transportation can have a negative impact on the financial system and national economic growth, even the global economy. The likelihood of committing money laundering offenses may increase (Pretorius dkk., 2021). Although it does not cause direct physical harm to the victim, the threat to national economic stability requires prosecution by the criminal justice system for money laundering activities.

In the preliminary description above, the author is interested in analyzing the law related to the crime of money laundering, with the title Criminal Sanctions Against the Crime of Money Laundering in the Perspective of Economic Analysis of Law (Stockwell dkk., 2021). With the formulation of the problem as follows:

1. How is the Criminal Sanctions Against the Crime of Money Laundering in Indonesia.
2. How the Legal Principles of Criminal Sanctions Against the Crime of Money Laundering Reviewed in the Perspective of Legal Economic Analysis.

This research is a normative legal study that focuses on analyzing the legal norm system, including principles, norms, rules of legislation, court decisions, and doctrine (Mao dkk., 2019). The research is prescriptive legal research analysis based on literature study, by analyzing legal issues through an understanding of legislation, literature, and other reference sources (Scarabottolo dkk., 2022). This research uses an empirical juridical approach with secondary data. Secondary data is obtained from the results of studies of legal literature and literature studies.

RESEARCH METHODOLOGY

1. What are the factors that cause differences in the judge's legal considerations in making a rehabilitation decision for the perpetrators of the crime of narcotics abuse based on Decision Number: 302/Pid.Sus/2022/PN. Tjk and Decision Number 217/Pid.Sus/2022/PN.Kla?
2. What are the legal considerations of judges in making decisions on rehabilitation of perpetrators of narcotics abuse based on Decision Number: 302/Pid.Sus/2022/PN. Tjk and Decision Number 217/Pid.Sus/2022/PN.Kla?

RESULT AND DISCUSSION

Criminal Sanctions Against the Crime of Money Laundering in Indonesia.

The term "criminal offense" is a translation of the term "strafbaar feit" which is not explicitly explained in the Criminal Code (Bojanic & Warnick, 2020). In general, this term is often synonymous with the term "offense" which comes from Latin, namely "delictum". This can be found in the Big Indonesian Dictionary (KBBI, 1990).

Money laundering is a legal term to translate money laundering. The term "money laundering" was first used in the United States in 1982 to describe the process of laundering illegally obtained mafia assets to make them appear to come from legitimate sources. (Amrullah, M, 2020). In 2002, the Indonesian government first criminalized money laundering through Law No. 15 of 2002. This law was later amended by Law No. 25 of 2003. The enactment of Law No. 8 of 2010 on the Prevention and Eradication of Money Laundering has caused Law No. 15 of 2002 to be revoked and invalidated. Law No. 8/2010 is known as the PPTPPU Law.

The PPTPPU Law provides a definition of Money Laundering Crime in Article 1 number 1, which is an act that fulfills the elements of a criminal offense in accordance with this law. This definition limits Money Laundering Crime to the elements of the criminal offense listed in the law. On the other hand, the definition of Money Laundering Crime in Law Number 25 Year 2003 is more specific, covering actions such as placing, transferring, paying, spending, and others on Assets

suspected of being the proceeds of criminal acts. The PPTPPU Law is broader because it covers all actions that fulfill the elements of a criminal offense in accordance with the law, criminal sanctions for money laundering are regulated in Articles 3-10 of the PPTPPU Law. These criminal sanctions apply to individuals and companies that commit money laundering crimes. Criminal threats that can be imposed on the perpetrators of money laundering, both individuals and companies, The PPTPPU Law is a form of Criminal Sanction in accordance with the doctrine of criminal law. This sanction can be applied to individuals who commit criminal acts regulated in normative law in Article 10 of the Criminal Code. The crime of money laundering, which is one of the crimes in the field of trade, must be analyzed using an economic approach called economic legal analysis. The concept of legal economic analysis, called legal economic analysis, first appeared in the economic analysis of criminal law in 1764 when Cesare Beccaria published his book *On Crimes and Punishments*. In his book, Beccaria argued that criminal sanctions should be designed in such a way that, to a certain extent, they can cancel out the benefits obtained by criminals.

Legal Principles of Criminal Sanctions Against the Crime of Money Laundering Viewed from the Perspective of Legal Economic Analysis

Economic Analysis of Law is an economic law concept developed by Richard Posner who was inspired by Jeremy Bentham's utilitarian thinking. This approach emphasizes the principle of sufficiency as a legal doctrine that becomes a middle ground when the law is faced with a conflict between justice and legal certainty. (Ali, 2008).

The analytical economic approach to law uses law as an economic tool to maximize happiness by considering economic factors without regard to justice, rights become economic norms based on three main factors: Value, ease of use and efficiency based on human reason. In this approach, Posner argues that people obey the law when they expect benefits, both monetary and non-monetary, rather than breaking it, and vice versa. (Sugianto, 2013). The main principles of economic analysis of criminal law are rationality and efficiency. The principle of rationality means that when people commit crimes, they think rationally with the aim of maximizing their expected utility and choosing the best way to achieve that goal. (Tambunan, 2016). If the principle of reasoning is applied in criminal law, it is assumed that humans, as rational economic beings, weigh the costs of crime against the benefits. If the expected benefits are greater than the costs incurred, he commits a crime. Conversely, if the expected benefits are smaller than the costs incurred, he does not commit a crime (Ali, 2008).

Efficiency principle In the context of economic analysis of criminal law, the efficiency principle refers to two things, whether the crime requires a large payment to increase the expected benefits and whether the punishment imposed is more or greater than the benefits obtained by the offender. If the punishment is higher or more severe than the benefits received by the offender, the offender is less likely to commit a crime. (Ali, 2008).

Criminal Sanctions for Money Laundering Crimes in the PPTPPU Law (Article 3, Article 4, and Article 5) include imprisonment and fines combined, namely imprisonment of 5-20 years and a fine of Rp. 1,000,000,000.00 - Rp. 10,000,000,000.00. In the perspective of economic analysis of criminal law, with a focus on the principle of rationality and the principle of efficiency,

In the economic analysis of criminal law, there are two relevant principles in assessing the sanctions for Money Laundering Crimes in the PPTPPU Law (Article 3, Article 4, and Article 5). First, the principle of rationality states that a person will commit a crime if the expected benefits are greater than the costs incurred, and vice versa. Criminal sanctions of imprisonment and fines in Article 3, Article 4, and Article 5 are considered to have reflected the principle of rationality because the sanctions given have a high quantity, so that the expected benefits will not exceed the

costs incurred to commit a crime. However, the criminal sanctions in Article 5 paragraph (1) are considered not effective enough in preventing crime because the imprisonment and fines given are not too heavy (Wahyuningsih & Rismanto, 2016).

Second, the principle of efficiency that focuses on the efficiency of the criminal sanctions given. Criminal sanctions in Article 3, Article 4, and Article 5 of the PPTPPU Law consisting of imprisonment and fines are considered in line with the principle of efficiency because the criminal sanctions tend to be more severe than the results or benefits that can be obtained by the perpetrators. Although imprisonment is considered inefficient because it requires high social costs, the fine in the article is considered efficient because it does not require cost expenditure and the state actually receives payment from the perpetrator, the amount of fine in Article 5 paragraph (2) is considered not too high considering the potential profit from the crime. The principle of efficiency is also reflected in the provisions of Article 8 which stipulates imprisonment as an alternative if the assets of the convict are insufficient to pay the fine. In conclusion, the criminal sanctions for Money Laundering Crime in the PPTPPU Law have considered the principles of rationality and efficiency, but there is potential to increase effectiveness in preventing crime and reducing social costs incurred by the state.

CONCLUSION

Based on the results of research and comparative analysis of the principle of legality in Indonesia and in the UK, it can be concluded as follows:

1. The Indonesian government first criminalized money laundering through Law No. 15 of 2002. This law was later amended by Law No. 25 Year 2003. The enactment of Law No. 8 of 2010 on the Prevention and Eradication of Money Laundering has caused Law No. 15 of 2002 to be revoked and invalidated. Law No. 8/2010 is known as the PPTPPU Law. Criminal sanctions for the crime of money laundering are regulated in Article 3 to Article 10 of the PPTPPU Law. These criminal sanctions apply to individuals and corporations that commit Money Laundering Crimes.
2. In the economic analysis of criminal law, there are two principles that are relevant in assessing the criminal sanctions for Money Laundering Crime in the PPTPPU Law (Article 3, Article 4, and Article 5). First, the principle of rationality which states that a person will commit a crime if the expected benefits are greater than the costs incurred, and vice versa. Second, the principle of efficiency that emphasizes the efficiency of the criminal sanctions given. Criminal sanctions in Article 3, Article 4, and Article 5 of the PPTPPU Law consisting of imprisonment and fines are considered in line with the principle of efficiency because the criminal sanctions tend to be more severe than the results or benefits that can be obtained by the perpetrators.

2. Suggestion

The role of the government and the police is needed in overcoming the crime of money laundering, considering that there are still many modes carried out by irresponsible people in committing money laundering. It is hoped that the community can take better care and find out more about every mode carried out by certain individuals, so that they can avoid the consequences of losses in money laundering.

AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.

Author 3: Data curation; Investigation.

REFERENCES

- Bojanic, D. C., & Warnick, R. B. (2020). The Relationship between a Country's Level of Tourism and Environmental Performance. *Journal of Travel Research*, 59(2), 220–230. <https://doi.org/10.1177/0047287519827394>
- Callhoff, J., Albrecht, K., Redeker, I., Lange, T., Goronzy, J., Günther, K., Zink, A., Schmitt, J., Saam, J., & Postler, A. (2020). Disease Burden of Patients With Osteoarthritis: Results of a Cross-Sectional Survey Linked to Claims Data. *Arthritis Care & Research*, 72(2), 193–200. <https://doi.org/10.1002/acr.24058>
- Chandrasekar, R., Chandrasekhar, S., Sundari, K. K. S., & Ravi, P. (2020). Development and validation of a formula for objective assessment of cervical vertebral bone age. *Progress in Orthodontics*, 21(1), 38. <https://doi.org/10.1186/s40510-020-00338-0>
- Coppola, L., Cianflone, A., Grimaldi, A. M., Incoronato, M., Bevilacqua, P., Messina, F., Baselice, S., Soricelli, A., Mirabelli, P., & Salvatore, M. (2019). Biobanking in health care: Evolution and future directions. *Journal of Translational Medicine*, 17(1), 172. <https://doi.org/10.1186/s12967-019-1922-3>
- Di Vaio, A., Palladino, R., Hassan, R., & Escobar, O. (2020). Artificial intelligence and business models in the sustainable development goals perspective: A systematic literature review. *Journal of Business Research*, 121, 283–314. <https://doi.org/10.1016/j.jbusres.2020.08.019>
- Elvén, M., Kerstis, B., Stier, J., Hellström, C., Von Heideken Wågert, P., Dahlen, M., & Lindberg, D. (2022). Changes in Physical Activity and Sedentary Behavior before and during the COVID-19 Pandemic: A Swedish Population Study. *International Journal of Environmental Research and Public Health*, 19(5), 2558. <https://doi.org/10.3390/ijerph19052558>
- Karimi-Maleh, H., Darabi, R., Shabani-Nooshabadi, M., Baghayeri, M., Karimi, F., Rouhi, J., Alizadeh, M., Karaman, O., Vasseghian, Y., & Karaman, C. (2022). Determination of D&C Red 33 and Patent Blue V Azo dyes using an impressive electrochemical sensor based on carbon paste electrode modified with ZIF-8/g-C₃N₄/Co and ionic liquid in mouthwash and toothpaste as real samples. *Food and Chemical Toxicology*, 162, 112907. <https://doi.org/10.1016/j.fct.2022.112907>
- Luque, A., Carrasco, A., Martín, A., & De Las Heras, A. (2019). The impact of class imbalance in classification performance metrics based on the binary confusion matrix. *Pattern Recognition*, 91, 216–231. <https://doi.org/10.1016/j.patcog.2019.02.023>
- Makdessi, C. J., Day, C., & Chaar, B. B. (2019). Challenges faced with opioid prescriptions in the community setting – Australian pharmacists' perspectives. *Research in Social and Administrative Pharmacy*, 15(8), 966–973. <https://doi.org/10.1016/j.sapharm.2019.01.017>
- Mao, S.-J., Shen, J., Xu, F., & Zou, C.-C. (2019). Quality of life in caregivers of young children with Prader–Willi syndrome. *World Journal of Pediatrics*, 15(5), 506–510. <https://doi.org/10.1007/s12519-019-00311-w>
- Morel, L., Yao, Z., Cladé, P., & Guellati-Khélifa, S. (2020). Determination of the fine-structure constant with an accuracy of 81 parts per trillion. *Nature*, 588(7836), 61–65. <https://doi.org/10.1038/s41586-020-2964-7>
- Nosyk, B., Slaunwhite, A., Urbanoski, K., Hongdilokkul, N., Palis, H., Lock, K., Min, J. E., Zhao, B., Card, K. G., Barker, B., Meilleur, L., Burmeister, C., Thomson, E., Beck-McGreevy, P., & Pauly, B. (2021). Evaluation of risk mitigation measures for people with substance use disorders to address the dual public health crises of COVID-19 and overdose in British Columbia: A mixed-method study protocol. *BMJ Open*, 11(6), e048353. <https://doi.org/10.1136/bmjopen-2020-048353>
- Paul, D., Sanap, G., Shenoy, S., Kalyane, D., Kalia, K., & Tekade, R. K. (2021). Artificial intelligence in drug discovery and development. *Drug Discovery Today*, 26(1), 80–93. <https://doi.org/10.1016/j.drudis.2020.10.010>

- Pretorius, B., Ambuko, J., Papargyropoulou, E., & Schönfeldt, H. C. (2021). Guiding Nutritious Food Choices and Diets along Food Systems. *Sustainability*, 13(17), 9501. <https://doi.org/10.3390/su13179501>
- Riess, A. G., Casertano, S., Yuan, W., Macri, L. M., & Scolnic, D. (2019). Large Magellanic Cloud Cepheid Standards Provide a 1% Foundation for the Determination of the Hubble Constant and Stronger Evidence for Physics beyond Λ CDM. *The Astrophysical Journal*, 876(1), 85. <https://doi.org/10.3847/1538-4357/ab1422>
- Scarabottolo, C. C., Tebar, W. R., Gobbo, L. A., Ohara, D., Ferreira, A. D., Da Silva Canhin, D., & Christofaro, D. G. D. (2022). Analysis of different domains of physical activity with health-related quality of life in adults: 2-year cohort. *Health and Quality of Life Outcomes*, 20(1), 71. <https://doi.org/10.1186/s12955-022-01981-3>
- Stuart, T., Butler, A., Hoffman, P., Hafemeister, C., Papalexi, E., Mauck, W. M., Hao, Y., Stoeckius, M., Smibert, P., & Satija, R. (2019). Comprehensive Integration of Single-Cell Data. *Cell*, 177(7), 1888-1902.e21. <https://doi.org/10.1016/j.cell.2019.05.031>
- Tambe, P., Cappelli, P., & Yakubovich, V. (2019). Artificial Intelligence in Human Resources Management: Challenges and a Path Forward. *California Management Review*, 61(4), 15–42. <https://doi.org/10.1177/0008125619867910>
- Yang, W.-Y., Melgarejo, J. D., Thijs, L., Zhang, Z.-Y., Boggia, J., Wei, F.-F., Hansen, T. W., Asayama, K., Ohkubo, T., Jeppesen, J., Dolan, E., Stolarz-Skrzypek, K., Malyutina, S., Casiglia, E., Lind, L., Filipovský, J., Maestre, G. E., Li, Y., Wang, J.-G., ... for The International Database on Ambulatory Blood Pressure in Relation to Cardiovascular Outcomes (IDACO) Investigators. (2019). Association of Office and Ambulatory Blood Pressure With Mortality and Cardiovascular Outcomes. *JAMA*, 322(5), 409. <https://doi.org/10.1001/jama.2019.9811>
- Yang, Y., Gao, W., Guo, S., Mao, Y., & Yang, Y. (2019). Introduction to BeiDou-3 navigation satellite system. *Navigation*, 66(1), 7–18. <https://doi.org/10.1002/navi.291>
- Zhang, S., Yao, L., Sun, A., & Tay, Y. (2020). Deep Learning Based Recommender System: A Survey and New Perspectives. *ACM Computing Surveys*, 52(1), 1–38. <https://doi.org/10.1145/3285029>
- Abuhassna, H., Al-Rahmi, W. M., Yahya, N., Zakaria, M. A. Z. M., Kosnin, A. Bt. M., & Darwish, M. (2020). Development of a new model on utilizing online learning platforms to improve students' academic achievements and satisfaction. *International Journal of Educational Technology in Higher Education*, 17(1), 38. <https://doi.org/10.1186/s41239-020-00216-z>
- Adegbeye, M. J., Ravi Kanth Reddy, P., Obaisi, A. I., Elghandour, M. M. M. Y., Oyebamiji, K. J., Salem, A. Z. M., Morakinyo-Fasipe, O. T., Cipriano-Salazar, M., & Camacho-Díaz, L. M. (2020). Sustainable agriculture options for production, greenhouse gasses and pollution alleviation, and nutrient recycling in emerging and transitional nations—An overview. *Journal of Cleaner Production*, 242, 118319. <https://doi.org/10.1016/j.jclepro.2019.118319>
- Ali, H., Khan, E., & Ilahi, I. (2019). Environmental Chemistry and Ecotoxicology of Hazardous Heavy Metals: Environmental Persistence, Toxicity, and Bioaccumulation. *Journal of Chemistry*, 2019, 1–14. <https://doi.org/10.1155/2019/6730305>
- Carleo, G., Cirac, I., Cranmer, K., Daudet, L., Schuld, M., Tishby, N., Vogt-Maranto, L., & Zdeborová, L. (2019). Machine learning and the physical sciences. *Reviews of Modern Physics*, 91(4), 045002. <https://doi.org/10.1103/RevModPhys.91.045002>
- Cheng, Y., Luo, R., Wang, K., Zhang, M., Wang, Z., Dong, L., Li, J., Yao, Y., Ge, S., & Xu, G. (2020). Kidney disease is associated with in-hospital death of patients with COVID-19. *Kidney International*, 97(5), 829–838. <https://doi.org/10.1016/j.kint.2020.03.005>
- Glare, P., Aubrey, K. R., & Myles, P. S. (2019). Transition from acute to chronic pain after surgery. *The Lancet*, 393(10180), 1537–1546. [https://doi.org/10.1016/S0140-6736\(19\)30352-6](https://doi.org/10.1016/S0140-6736(19)30352-6)
- Johdi, N. A., & Sukor, N. F. (2020). Colorectal Cancer Immunotherapy: Options and Strategies. *Frontiers in Immunology*, 11, 1624. <https://doi.org/10.3389/fimmu.2020.01624>

- Kampf, G., Todt, D., Pfaender, S., & Steinmann, E. (2020). Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. *Journal of Hospital Infection*, 104(3), 246–251. <https://doi.org/10.1016/j.jhin.2020.01.022>
- Lisio, M.-A., Fu, L., Goyeneche, A., Gao, Z., & Telleria, C. (2019). High-Grade Serous Ovarian Cancer: Basic Sciences, Clinical and Therapeutic Standpoints. *International Journal of Molecular Sciences*, 20(4), 952. <https://doi.org/10.3390/ijms20040952>
- Lurie, N., Saville, M., Hatchett, R., & Halton, J. (2020). Developing Covid-19 Vaccines at Pandemic Speed. *New England Journal of Medicine*, 382(21), 1969–1973. <https://doi.org/10.1056/NEJMp2005630>
- Norris, P., & Inglehart, R. (2019). *Cultural Backlash: Trump, Brexit, and Authoritarian Populism* (1 ed.). Cambridge University Press. <https://doi.org/10.1017/9781108595841>
- Parisi, G. I., Kemker, R., Part, J. L., Kanan, C., & Wermter, S. (2019). Continual lifelong learning with neural networks: A review. *Neural Networks*, 113, 54–71. <https://doi.org/10.1016/j.neunet.2019.01.012>
- Phillips, J. C., Hardy, D. J., Maia, J. D. C., Stone, J. E., Ribeiro, J. V., Bernardi, R. C., Buch, R., Fiorin, G., Hénin, J., Jiang, W., McGreevy, R., Melo, M. C. R., Radak, B. K., Skeel, R. D., Singharoy, A., Wang, Y., Roux, B., Aksimentiev, A., Luthey-Schulten, Z., ... Tajkhorshid, E. (2020). Scalable molecular dynamics on CPU and GPU architectures with NAMD. *The Journal of Chemical Physics*, 153(4), 044130. <https://doi.org/10.1063/5.0014475>
- Van Trotsenburg, P., Stoupa, A., Léger, J., Rohrer, T., Peters, C., Fugazzola, L., Cassio, A., Heinrichs, C., Beauloye, V., Pohlenz, J., Rodien, P., Coutant, R., Szinnai, G., Murray, P., Bartés, B., Luton, D., Salerno, M., De Sanctis, L., Vigone, M., ... Polak, M. (2021). Congenital Hypothyroidism: A 2020–2021 Consensus Guidelines Update—An ENDO-European Reference Network Initiative Endorsed by the European Society for Pediatric Endocrinology and the European Society for Endocrinology. *Thyroid*, 31(3), 387–419. <https://doi.org/10.1089/thy.2020.0333>
- Walsh, E. E., Frenck, R. W., Falsey, A. R., Kitchin, N., Absalon, J., Gurtman, A., Lockhart, S., Neuzil, K., Mulligan, M. J., Bailey, R., Swanson, K. A., Li, P., Koury, K., Kalina, W., Cooper, D., Fontes-Garfias, C., Shi, P.-Y., Türeci, Ö., Tompkins, K. R., ... Gruber, W. C. (2020). Safety and Immunogenicity of Two RNA-Based Covid-19 Vaccine Candidates. *New England Journal of Medicine*, 383(25), 2439–2450. <https://doi.org/10.1056/NEJMoa2027906>
- Wang, G., Ye, J. C., & De Man, B. (2020). Deep learning for tomographic image reconstruction. *Nature Machine Intelligence*, 2(12), 737–748. <https://doi.org/10.1038/s42256-020-00273-z>
- Wang, Y., Xu, Y., Tabari, H., Wang, J., Wang, Q., Song, S., & Hu, Z. (2020). Innovative trend analysis of annual and seasonal rainfall in the Yangtze River Delta, eastern China. *Atmospheric Research*, 231, 104673. <https://doi.org/10.1016/j.atmosres.2019.104673>
- Wang, Z., Li, C., & Domen, K. (2019). Recent developments in heterogeneous photocatalysts for solar-driven overall water splitting. *Chemical Society Reviews*, 48(7), 2109–2125. <https://doi.org/10.1039/C8CS00542G>
- Yatabe, Y., Dacic, S., Borczuk, A. C., Warth, A., Russell, P. A., Lantuejoul, S., Beasley, M. B., Thunnissen, E., Pelosi, G., Rekhtman, N., Bubendorf, L., Mino-Kenudson, M., Yoshida, A., Geisinger, K. R., Noguchi, M., Chirieac, L. R., Bolting, J., Chung, J.-H., Chou, T.-Y., ... Moreira, A. L. (2019). Best Practices Recommendations for Diagnostic Immunohistochemistry in Lung Cancer. *Journal of Thoracic Oncology*, 14(3), 377–407. <https://doi.org/10.1016/j.jtho.2018.12.005>
- Zemek, R. M., De Jong, E., Chin, W. L., Schuster, I. S., Fear, V. S., Casey, T. H., Forbes, C., Dart, S. J., Leslie, C., Zaitouny, A., Small, M., Boon, L., Forrest, A. R. R., Muiri, D. O., Degli-Esposti, M. A., Millward, M. J., Nowak, A. K., Lassmann, T., Bosco, A., ... Lesterhuis, W. J. (2019). Sensitization to immune checkpoint blockade through activation of a STAT1/NK axis in the tumor microenvironment. *Science Translational Medicine*, 11(501), eaav7816. <https://doi.org/10.1126/scitranslmed.aav7816>

- Zhou, M., Wang, H., Zeng, X., Yin, P., Zhu, J., Chen, W., Li, X., Wang, L., Wang, L., Liu, Y., Liu, J., Zhang, M., Qi, J., Yu, S., Afshin, A., Gakidou, E., Glenn, S., Krish, V. S., Miller-Petrie, M. K., ... Liang, X. (2019). Mortality, morbidity, and risk factors in China and its provinces, 1990–2017: A systematic analysis for the Global Burden of Disease Study 2017. *The Lancet*, 394(10204), 1145–1158. [https://doi.org/10.1016/S0140-6736\(19\)30427-1](https://doi.org/10.1016/S0140-6736(19)30427-1)
- Zong, Q., Yang, H., Wang, Q., Zhang, Q., Zhu, Y., Wang, H., & Shen, Q. (2019). Three-dimensional coral-like NiCoP@C@Ni(OH)₂ core-shell nanoarrays as battery-type electrodes to enhance cycle stability and energy density for hybrid supercapacitors. *Chemical Engineering Journal*, 361, 1–11. <https://doi.org/10.1016/j.cej.2018.12.041>

Copyright Holder :

© Fauzi Yunaidi et al. (2023)

First Publication Right :

© Rechtsnormen Journal of Law

This article is under: