

# Energy Utilization of Kinetic Paving Technology Review

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**Abstract:** *In fact, it can now be said that having access to electricity is a basic human requirement. The population growth, on the other hand, is one of the elements that can lead to an increase in the amount of energy needed. Within India Electricity is produced using a very small number of natural resources. In order to save energy, one should use only what is required or even make an update that can maintain current electrical energy. In addition to energy conservation, it would be preferable to easily produce additional energy. Walking is one among them, along with other daily human activities that provide energy. With a population of 140.76 billion, India is the second most populous country in the world. As a result, additional infrastructure, transportation services, and urbanisation have been created. Dependence of the economy on imported fossil fuels like oil, gas, and petroleum for its energy needs. The over use of fossil fuels results in high greenhouse gas emissions, which disturb the ecological balance and create climate change. Thus, energy production using technology for energy harvesting is crucial to enhancing the ecological balance. As a result, kinetic pavement technology was developed, which generates electricity when people walk on it. The advantages of this technology allow for the creation of electricity that may be utilised to power the kinetic paving's surroundings. Regarding lighting in paving, it can serve as lighting décor or a source of power for nearby structures. In areas with high pedestrian activity, kinetic paving is used. The people and the environment should benefit from this energy*

**Keywords:** Energy harvesting, clean and green energy, and piezoelectric and pyroelectric technology.

## REFERENCES

- [1]. Andayani, I. 2018 Paving Kinetik-Sistem Pemanenan Energidari Perkerasan Mengubah Energi KinetikMenjadiEnergi Listrik.
- [2]. Shukla.A, Ansari,S.A, 2018. Energy Harvesting from Road Pavement: A Cleaner and Greener Alternative. International Research Journal of Engineering and Technology (IRJET).
- [3]. Jose, Tom. Boban, Binoy, Sijo MT. 2013. Electricity Generation from Footsteps; A Regenerative Energy Source. International Journal of Scientific and Research Publication.
- [4]. Adibroto, F. 2014. Pengaruhpenambahanberbagaijenisserat pada kuattekan paving block. Jurnal Rekayasa Sipil (JRS-Unand), 10(1), pp.1-11.
- [5]. Godithi, S. B., Sachdeva, E., Garg, V., Brown, R., Kohler, C., & Rawal, R. 2019. A review of advances for thermal and visual comfort controls in personal environmental control (PEC) systems. Intelligent Buildings International, 11(2), pp.75-104.
- [6]. Khaligh, A., Zeng, P., & Zheng, C. 2009. Kinetic energy harvesting using piezoelectric and electromagnetic technologies—state of the art. IEEE Transactions on Industrial Electronics, 57(3), pp.850-860.
- [7]. S. Roundy, P. Wright, and J. M. Rabaey,2003. Energy Scavenging for Wireless Sensor Networks With Special Focus on Vibrations. New York: SpringerVerlag.
- [8]. Shrivastava D, Gorey A, Gupta A, Parandkar P, Dikshit T, 2010. Energy Harvesting via Piezoelectricity, International Journal of Information Technology.
- [9]. Nelson W, Piezoelectric Materials: Structure, Properties and Applications, 2010. New York: Nova Science Publishers.

- [10]. Elham Maghsoudi Nia<sup>1, a</sup>, Noor Amila Wan Abdullah Zawawi<sup>2, b\*</sup>, Balbir Singh<sup>3</sup>, Department of Civil and Environmental Engineering, University Technology PETRONAS, 32610, Seri Iskandar, Malaysia.
- [11]. I Ansori<sup>1</sup>, Wanita SubadraAbioso Department Teknik Arsitektur, Universitas computer Indonesia, Indonesia
- [12]. Shukla\*<sup>1</sup>, S.A. Ansari B.Tech III year Student, Zakir Husain College of Engineering and Technology, Aligarh Muslim University, Aligarh, Uttar Pradesh, India.
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- [14]. Elham Maghsoudi Nia<sup>1, a</sup>, Noor Amila Wan Abdullah Zawawi<sup>2, b\*</sup>, Balbir Singh Mahinder Singh<sup>3</sup>, Department of Civil and Environmental Engineering, University Technology PETRONAS, 32610, Seri Iskandar, Malaysia Department of Fundamental and Applied Sciences, University technology PETRONAS, 32610, Seri Iskandar, Malaysia
- [15]. Andayani, I. 2018 Paving Kinetic-System Pemanenan Energy dariPerkerasanMengubah Energy Kinetic Menjadi Energy Listrik.
- [16]. Shukla.A, Ansari,S.A, 2018. Energy Harvesting from Road Pavement: A Cleaner and Greener Alternative. International Research Journal of Engineering and Technology (IRJET).
- [17]. Jose, Tom. Boban, Binoy, Sijo MT. 2013. Electricity Generation from Footsteps; A Regenerative Energy Source. International Journal of Scientific and Research Publication.
- [18]. Adibroto, F. 2014. Pengaruhpenambahanberbagaijenisserat pada kuatekan paving block. JurnalRekayasaSipil (JRS-Unand), 10(1), pp.1-11.
- [19]. Godithi, S. B., Sachdeva, E., Garg, V., Brown, R., Kohler, C., & Rawal, R. 2019. A review of advances for thermal and visual comfort controls in personal environmental control (PEC) systems. Intelligent Buildings International, 11(2), pp.75-104.
- [20]. Khaligh, A., Zeng, P., & Zheng, C. 2009. Kinetic energy harvesting using piezoelectric and electromagnetic technologies—state of the art. IEEE Transactions on Industrial Electronics, 57(3), pp.850-860.