






申請人重要著作證明

The important published works of the past by the applicant to the
ResearchScholarship for International Graduate StudentsCertificate

著作名稱 Publication name	Haryanto, Y.*, Gan, B. S., Widyaningrum, A., Wariyatno, N. G., & Fadli, A. On the performance of steel wire rope as the external strengthening of RC beams with different end-anchor types. Jurnal Teknologi (Sciences and Engineering), 80(5), 145-154, 2019. ESCI and Scopus journal (Engineering)	日期 Date	Received 2 September 2017 Received in revised form 9 May 2018 Accepted 1 June 2018 Published online 1 August 2018
著作摘要 Abstract	This work investigated the performance of steel wire rope as an external strengthening for reinforced concrete beams with different end-anchor types. A study is conducted on reinforced concrete beams with the size of 100 mm x 150 mm x 1000 mm, consisting of 1 beam without strengthening (BTP); 1 beam strengthened with 2 steel wire ropes of diameter 6 mm with end-anchor type 1 (BPA1); and 1 beam strengthened with 2 steel wire ropes of diameter 6 mm with end-anchor type 2 (BPA2). It is found that the external strengthening of reinforced concrete beams using steel wire rope has the advantage of better serviceability due to its higher ductility than the beam without strengthening. The load-carrying capacity of reinforced concrete beams, which are externally strengthened with steel wire ropes, shows a significant increase of up to 60%. All specimens meet the minimum ductility requirements; in this case, the strengthening beams have other advantages, i.e. improved performance in preventing brittle failure. In this study, the increased stiffness is associated proportionately with the increased strength. This is supported by previous findings which suggest that the stiffness cannot be completely separated and independent of the strength. The failure in all specimens appeared in the same phases and all specimens experienced flexural failure. The ratios of end-anchor type 1 to end-anchor type 2 were close to 1 for all the parameters studied, which means that both types of end-anchor make an equally good contribution to the performance of steel wire rope.		
申請人完成部分或 貢獻說明 Contribution explanation or parts completed by	貢獻百分比 Contribution Proportion :	60%	



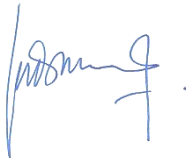
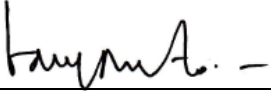

Outstanding Award applicant	<ul style="list-style-type: none"> - Conceived of the original and presented idea - Carried out the experiment - Wrote the manuscript with support from co-authors - Supervised the project 					
共同作者親自簽名 Co-author signature	1		2		3	
申請者簽名 Applicant signature:				日期 Date: August 28, 2020		
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Note: if co-author over than three people, at least sign by the three.

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<p>著作名稱 Publication name</p>	<p>Haryanto, Y.* , Gan, B. S., Wariyatno, N. G., & Indiyati, E. W. The performance of a ten-story irregular apartment building model under seismic load in Purbalingga regency Indonesia. ARPN Journal of Engineering and Applied Science, 2(17), 4858-4866, (2017). Scopus journal (Engineering)</p>	<p>日期 Date</p>	<p>17 September 2017</p>
<p>著作摘要 Abstract</p>	<p>Purbalingga, Indonesia, is regency with moderately high seismicity potential requiring compliance with planning and implementation rules for earthquake-resistant structural systems. We evaluate the performance of a ten-story irregular apartment building model in Purbalingga due to the seismic load. It is necessarily conducted in order to provide information on impacts and mitigation strategies that should be implemented. The evaluation is performed based on seismic loads given in the 2002 and 2012 Indonesian National Standard (SNI) using linear static analysis, dynamic response analysis, and pushover analysis. Based on linear static analysis, the drift ratio decreases by an average of 34.42 and 32.61% for the X and Y directions respectively. Meanwhile, based on the dynamic response analysis, the drift ratio also decreases by an average of 30.74 and 27.33% for the X and Y directions respectively. In addition, the pushover analysis indicates that the performance of this apartment building model is still at Immediate Occupancy (IO) level, the post-earthquake damage state in which the building remains safe to occupy, essentially retaining the pre-earthquake design strength and stiffness of the structure. The risk of life-threatening injury as a result of structural damage is very low, and although some minor structural repairs may be appropriate, these would generally not be required prior to re-occupancy.</p>		
<p>申請人完成部分或 貢獻說明 Contribution explanation or parts completed by</p>	<p>貢獻百分比 Contribution Proportion :</p>	<p style="text-align: center;">60%</p>	






Outstanding Award applicant	<ul style="list-style-type: none"> - Conceived of the original and presented idea - Carried out the analysis - Wrote the manuscript with support from co-authors - Supervised the project 					
共同作者親自簽名 Co-author signature	1		2		3	
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著作名稱 Publication name	Haryanto, Y.* , Gan, B. S., Widyaningrum, A., & Maryoto, A. Near surface mounted bamboo reinforcement for flexural strengthening of reinforced concrete beams. Jurnal Teknologi (Sciences and Engineering), 79(6), 233-240, 2017. ESCI and Scopus journal (Engineering)	日期 Date	Received 28 March 2017 Received in revised form 17 June 2017 Accepted 10 August 2017
著作摘要 Abstract	Near Surface Mounted (NSM) is a technique performed for the installation of strengthening material into grooves cut into the concrete cover of reinforced concrete (RC) beams bonded using a bonding agent. This technique is becoming more widely recognized because of its efficiency, effectiveness, and ease of application. We investigated flexural strengthening of RC beams with the NSM technique using bamboo reinforcements, through both experimental tests and a finite element analysis (FEA). The experimental tests were carried out on three RC beams, one consisting of a control beam, and the other two strengthened by the NSM technique with two steel reinforcements, and four bamboo reinforcements. From the experimental tests, we found that the flexural strength of the beam with NSM bamboo reinforcements was increased by 41.7% and the deflection ductility index was reduced by 21.55%. The mode of failure observed in all the strengthened beams was a flexural failure. Finally, the result of FEA behaved similarly to the results of the experimental test.		
申請人完成部分或 貢獻說明 Contribution explanation or parts completed by	貢獻百分比 Contribution Proportion :	60%	





Outstanding Award applicant	<ul style="list-style-type: none"> - Conceived of the original and presented idea - Carried out the experiment - Wrote the manuscript with support from co-authors - Supervised the project 					
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著作名稱 Publication name	Maryoto, A.* , Waluyo, S., Haryanto, Y., Hermanto, N. I. S., Anisa, N. V. Waste tire application in concrete structures. Aceh International Journal of Science and Technology, 6(1), 8-18, 2017. Indonesia national accredited and DOAJ journal (Engineering)	日期 Date	Received : October 18, 2016 Accepted : April 17, 2017 Online: April 25, 2017
著作摘要 Abstract	The waste tire is produced more than 10 million tons every year in the world. This problem needs serious treatment to eliminate the waste tires. This work is aimed to recycle the waste tire in concrete as a reinforcement. The contribution of the waste tires in flexural strength capacity of concrete is investigated by using experimental work and numerical simulation. Since material is quite nonhomogenous compared to the pure concrete, we use six concrete beam specimens with dimension 150 mm x 150 mm x 1000 mm to get better fitting results. One specimen is non reinforced concrete beam and five specimens are waste tires reinforced concrete beam. For each of the five specimen, the waste tire reinforcement is tensioned with 0%, 17%, 25%, 40% and 60% strain before casting the concrete. The flexural strength tests are conducted after 28 days concrete ages under three point loadings. After the test, we observe that the waste tire reinforcement together with pre-stress contribute significantly on the flexural strength of the concrete beam as predicted. Especially, maximum load on the specimen WTR-40 increases 28.8% compared to the specimen NR. Finally, to support the test, finite element analysis is performed as well in this work and compared with the experimental results. We found that numerical simulation has a little difference to the experimental result.		
申請人完成部分或 貢獻說明 Contribution explanation or parts completed by	貢獻百分比 Contribution Proportion :	10%	





Outstanding Award applicant	<ul style="list-style-type: none"> - Analysed the data - Aided in interpreting the results and worked on the manuscript 					
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申請者簽名 Applicant signature:				日期 Date: August 28, 2020		
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<p>著作名稱 Publication name</p>	<p>Haryanto, Y.* , Gan, B. S., & Maryoto, A. Wire rope flexural bonded strengthening system on RC-beams: A finite element simulation. International Journal of Technology, 8(1), 134-144, 2017. ESCI and Scopus jurnal (Engineering)</p>	<p>日期 Date</p>	<p>Received: December 2015 Revised: December 2016 Accepted: January 2017</p>
<p>著作摘要 Abstract</p>	<p>We conducted a finite element simulation by using a computer program, ATENA, to verify the behavior of T-section reinforced concrete beams strengthened by bonded wire ropes in the negative moment region with a pretensioned initial prestressing force; we compared this behavior with that in experimental tests. The simulation was performed on five models consisting of one unstrengthened beam and beams strengthened by wire ropes with initial prestressing forces of 0%, 10%, 20%, and 30%. We found that the capacity of a flexural load had the ratios to the experimental results close to 1 — that is, 1.25, 1.16, 1.12, 1.01, and 1.10, for UB, SB1, SB2, SB3, and SB4, respectively. The ratios of effective stiffness, as the result of the simulation, to the experimental results were 1.45, 1.08, 1.76, 2.13, and 2.46 for UB, SB1, SB2, SB3, and SB4, respectively. We also observed that crack propagation developed in the finite element simulation indicated that all models underwent flexural failure.</p>		
<p>申請人完成部分或 貢獻說明 Contribution explanation or parts completed by</p>	<p>貢獻百分比 Contribution Proportion :</p>	<p style="text-align: center;">60%</p>	

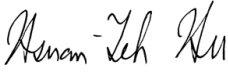


Outstanding Award applicant	<ul style="list-style-type: none"> - Conceived of the original and presented idea - Carried out the analysis - Wrote the manuscript with support from co-authors - Supervised the project 					
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<p>著作名稱 Publication name</p>	<p>Haryanto, Y.* , Hu, H.-T., Han, A. L., Hsiao, F.-P., Teng, C.-J., & Hidayat, B. A. Prestressing of steel wire ropes bonded in the negative moment region to enhance structural performance of T-section RC beams. Structural Engineering and Mechanics [in review], SCIE and Scopus journal (Engineering)</p>	<p>日期 Date</p>	<p>[In review]</p>
<p>著作摘要 Abstract</p>	<p>This research intends to examine structural performance delivered by reinforced concrete (RC) beams that have been strengthened by means of bonded steel wire rope (SWR) and prestressing levels. The mentioned strengthening approach had been applied for flexural strengthening of T-section RC beams in the negative moment region to find out the advantages of this technique. For this purpose, four T-section RC beams were prepared and subjected to monotonic 4-point loading. Of the four beams, one was a control beam that was not strengthened, one was strengthened using bonded nonprestressed SWRs, and two were strengthened using bonded SWRs that had been subjected to prestressing of 10 and 20% of their nominal tensile strength. Experimentation showed that the load-carrying capacity was relatively higher for the prestressed beams than non-prestressed strengthened beams on the point of initiation of concrete cracking as well as steel yielding. This research also determined and discussed the impact of the prestress level over current beam performance. The tested beams were replicated with the help of a three-dimensional finite element model which proved effective in making predictions about the behavior of such structures and hence appropriate for use in future researches.</p>		
<p>申請人完成部分或 貢獻說明 Contribution explanation or parts completed by</p>	<p>貢獻百分比 Contribution Proportion :</p>	<p>60%</p>	

Outstanding Award applicant	<ul style="list-style-type: none"> - Conceived of the original and presented idea - Carried out the analysis - Wrote the manuscript with support from co-authors - Supervised the project 					
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著作名稱 Publication name	Hidayat, B. A. *, Hsiao, F.-P., Hu, H.-T., Han, A. L., Pita, P., & Haryanto, Y. Seismic performance of non-ductile detailing reinforced concrete frames: an experimental investigation. Earthquakes and Structures [in review], SCIE and Scopus journal (Engineering)	日期 Date	[in review]
著作摘要 Abstract	Non-ductile detailing of Reinforced Concrete (RC) frames may lead to structural failure when the structure is subjected to earthquake response. These designs are generally encountered in older RC frames constructed prior to the introduction of the ductility aspect. The failure observed in the beam-column joints (BCJs) and accompanied by excessive column damage. This work examines the seismic performance and failure mode of non-ductile designed RC columns and exterior BCJs. The design was based on the actual building in Tainan City, Taiwan, that collapsed due to the 2016 Meinong earthquake. Hence, an experimental investigation using cyclic testing was performed on two columns and two BCJ specimens scaled down to 50%. The experiment resulted in a poor response in both specimens. Excessive cracks and their propagation due to the incursion of the lateral loads could be observed close to the top and bottom of the specimens. Joint shear failure appeared in the joints. The ductility of the member was below the desired value of 4. This is the minimum number required to survive an earthquake with a similar magnitude to that of El Centro. The evidence provides an understanding of the seismic failure of poorly detailed RC frame structures.		
申請人完成部分或 貢獻說明 Contribution explanation or parts completed by	貢獻百分比 Contribution Proportion :	8%	



Outstanding Award applicant	- Aided in interpreting the results and worked on the manuscript					
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The important published works of the past by the applicant to the
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著作名稱 Publication name	Dewanto, B. G.*, Yang, M., Heliani, L. S., Haryanto, Y., & Hidayat, B. A. Coseismic deformation associated with the september 14 2012 mentawai, indonesia, earthquake. Civil Engineering Dimension [in review], Indonesia national accredited and DOAJ journal (Civil Engineering)	日期 Date	[In review]
著作摘要 Abstract	After the occurrence of the 2010 Mw 7.8 Mentawai tsunami earthquake on the Sunda megathrust in Indonesia, a following 2012 Mw 6.2 earthquake occurred right east of the 2010 event, one of the areas that has a high coupling rate but the energy released is less, called Mentawai seismic gap. It is important for us to understand the seismic hazard of the Mentawai seismic gap for disaster mitigation purpose. Then, we therefore collected the GPS observations during 2010-2012 from 16 SuGAR stations to realize the coseismic displacements of the 2012 Mw 6.2 earthquake. The GPS data was processed using GAMIT/GLOBK 10.7 software to get the daily coordinates for every station, and further the coseismic displacement field have been solved based on the coordinate time series. The maximum and minimum displacement field occur in BSAT and MLKN stations, respectively. The coseismic source model has been completed using the kinematic model. From that, the energy accumulation detected in 2012 earthquake is Mw 6.2. The maximum slip distribution occurs at 8 km in depth with the value almost reaching 150 mm and show that the 2012 earthquake have filled some part of the Mentawai seismic gap.		
申請人完成部分或 貢獻說明 Contribution explanation or parts completed by	貢獻百分比 Contribution Proportion :	10%	



Outstanding Award applicant	- Aided in interpreting the results and worked on the manuscript					
共同作者親自簽名 Co-author signature	1		2		3	
申請者簽名 Applicant signature:					日期 Date: August 28, 2020	
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著作名稱 Publication name	Dewanto, B. G.* , Haryanto, Y., & Purnomo, S. N. Land subsidence potential detection in yogyakarta international airport using sentinel-1 insar data. Civil Engineering Dimension [in review], Indonesia national accredited and DOAJ journal (Civil Engineering)	日期 Date	[In review]
著作摘要 Abstract	On 27 January 2017, the Indonesian government started building a new international 20 airport in Yogyakarta Province, named Yogyakarta International Airport (YIA) to 21 replace Adisucipto International Airport. YIA is located near the beach, which means 22 that an awareness of natural disasters, such as coastal flooding, is essential. One of the 23 causes of sea water flooding is land subsidence phenomenon. It can be monitored by 24 using Sentinel-1 InSAR data. To monitor the crustal deformation, the data that we used 25 in this research are from 2016-2019 and it is in descending mode. It was processed 26 through LiCSBAS software which is published by the COMET in the UK. In the 27 processing scheme, interferograms with many unwrapping errors are detected and 28 removed via loop closure. Reliable time series and velocities are extracted using 29 several noise indices, with the help of masking. The results show the subsidence 30 phenomenon in the YIA area (up to 25 mm).		
申請人完成部分或 貢獻說明 Contribution explanation or parts completed by	貢獻百分比 Contribution Proportion :	20%	




Outstanding Award applicant	- Aided in interpreting the results and worked on the manuscript					
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<p>著作名稱 Publication name</p>	<p>Haryanto, Y.* , Hu, H.-T., Han, A. L., Wariyatno, N. G., & Hidayat, B. A. Predicting the flexural capacity of reinforced concrete beams strengthened with non-metallic materials using analytical method. Journal of Engineering Science and Technology [In review], ESCI and Scopus journal (Engineering)</p>	<p>日期 Date</p>	<p>[In review]</p>
<p>著作摘要 Abstract</p>	<p>This paper uses modified compression field theory and the analytical models based on this theory to make predictions about the flexural capacity of reinforced concrete beams strengthened with the help of non-metallic material (e.g. bamboo). The data are taken from earlier studies performed in 2017; as per the data, two RC beams are taken as specimens, of which one is the control beam while the other beam is strengthened with the help of the near-surface mounted technique using four bamboo strips. The study reveals the accuracy of the developed analytical models in terms of making predictions of load-deflection responses until the peak load; however, the predictions about beam ductility generally give underestimated figures. It is also shown that the models provide conservative predictions of the flexural capacity of the beams. The validated model is then used to study the impact of bamboo dimension, compressive strength of concrete, and ratio of steel reinforcement on the behavior of strengthened beams. The researchers found that the developed analytical method is efficient in terms of making quick and accurate predictions about flexural strength and load-deformation response and can also determine the conditions that may cause the strengthened reinforced concrete beams to collapse.</p>		
<p>申請人完成部分或 貢獻說明 Contribution explanation or parts completed by</p>	<p>貢獻百分比 Contribution Proportion :</p>	<p>60%</p>	

Outstanding Award applicant	<ul style="list-style-type: none"> - Conceived of the original and presented idea - Carried out the analysis - Wrote the manuscript with support from co-authors - Supervised the project 					
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著作名稱 Publication name	Haryanto, Y.* , Han, A. L., Hu, H.-T., Hsiao, F.-P., Hidayat, B. A., & Widyaningrum, A. Enhancement of Flexural Performance of RC Beams with Steel Wire Rope by External Strengthening Technique. Journal of the Chinese Institute of Engineers [in revision], SCIE and Scopus journal (Engineering)	日期 Date	[In revision]
著作摘要 Abstract	<p style="text-align: center;">Reinforced concrete structures around the world need repairing or strengthening at some stage in their lifetime for different reasons. Steel wire rope is one of potential material to strengthen reinforced concrete structures due to its high strength, light weight and high flexibility properties. This research was, therefore, conducted to investigate a relatively new technique to strengthen reinforced concrete beams using external steel wire ropes. This involved testing five beam specimens under a four-point bending configuration for failure, and the strengthening effects of external wire ropes on their performance were also studied. The results showed the ultimate load capacity was also significantly enhanced up to 250% compared to the control specimen. Moreover, the stiffness and energy absorption capacity of the strengthened specimens were improved due to the external strengthening technique. This means reinforced concrete beams strengthened with external steel wire rope are capable of fulfilling the flexural performance required for reinforced concrete structures.</p>		
申請人完成部分或 貢獻說明 Contribution explanation or parts completed by	貢獻百分比 Contribution Proportion :	60%	




Outstanding Award applicant	<ul style="list-style-type: none"> - Conceived of the original and presented idea - Carried out the experiment - Wrote the manuscript with support from co-authors - Supervised the project 					
共同作者親自簽名 Co-author signature	1		2	<i>Renan Zeh Hu</i>	3	
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著作名稱 Publication name	Haryanto, Y., Wariyatno, N. G., Hu, H.-T. *, Han, A. L., & Hidayat, B. A. Investigation on structural behavior of bamboo reinforced concrete slabs under concentrated load. Sains Malaysiana [Accepted/in editing], SCIE and Scopus journal (Sciences)	日期 Date	Accepted: 1 July 2020
著作摘要 Abstract	Reinforced concrete is perhaps the most widely used building material in the world. However, the materials used for reinforcement of concrete i.e. steel is quite expensive and scarcely available in the developing world. As a result, bamboo is considered to be a cheaper replacement with high tensile strength. This research investigated the structural behavior of bamboo-reinforced concrete slabs used for footplate foundation subjected to concentrated load. For this purpose, four different reinforced concrete slab panels were developed and analyzed. The influence of replacing steel with bamboo for the reinforcement of concrete slabs on their structural behavior was assessed by determining the load-deflection characteristics, the ultimate load, the stiffness, the ductility, the cracking pattern, and the energy absorption capacity. The results showed that in comparison to steel reinforced concrete slabs, the strength of 82% can be acquired by the bamboo reinforced slabs. Furthermore, ductility demonstrated by the two types of specimens was almost equivalent i.e. up to 93%. Those indicated that the structural behavior demonstrated by bamboo reinforced slabs is quite comparable to that of steel reinforced concrete slabs. Therefore, bamboo can prove to be a promising substitute for steel in concrete reinforcement. Future studies may further examine this opportunity.		
申請人完成部分或 貢獻說明 Contribution explanation or parts completed by	貢獻百分比 Contribution Proportion :	60%	




Outstanding Award applicant	<ul style="list-style-type: none"> - Conceived of the original and presented idea - Carried out the experiment - Wrote the manuscript with support from co-authors - Supervised the project 					
共同作者親自簽名 Co-author signature	1		2	Hsuan-Yeh Ku	3	
申請者簽名 Applicant signature:				日期 Date: August 28, 2020		
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著作名稱 Publication name	Haryanto, Y.* , Hu, H.-T., Han, A. L., Hidayat, B. A. & Widyaningrum, A. Seismic vulnerability assessment using rapid visual screening: case study of educational facility buildings of Jenderal Soedirman University, Indonesia. Civil Engineering Dimension, 22(1), 13-21, 2020. Indonesia national ccredited and DOAJ journal (Civil Engineering)	日期 Date	Received: 06 November 2019; Revised: 04 April 2020 Accepted: 25 April 2020
著作摘要 Abstract	Recent earthquake activity has brought about extensive structural damage and loss of life. The adverse effects of earthquakes on the economic sector can be seen all over the world, particularly in developing countries. This calls for those developing countries to adhere to various methods to combat these effects. Buildings serving the educational needs of the people can also contribute by accommodating people in case of emergencies and disaster. Therefore, these buildings must be evaluated in terms of their capacity and strength in the face of earthquakes. This study will employ the Rapid Visual Screening (RVS) technique to evaluate the seismic vulnerability condition of nine reinforced concrete educational buildings at Jenderal Soedirman University, Indonesia, five located in Purbalingga, and four in Purwokerto. The results of the study allow the authorities concerned to devise a prioritization plan regarding the structural safety of all of the educational buildings at Jenderal Soedirman University, Indonesia.		
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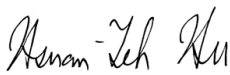


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共同作者親自簽名 Co-author signature	1		2		3	
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申請人重要著作證明

The important published works of the past by the applicant to the
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著作名稱 Publication name	Haryanto, Y.* , Hu, H.-T., Han, A. L., Atmajayanti, A. T., Galuh, D. L. C., & Hidayat, B. A. Finite element analysis of T-section RC beams strengthened by wire rope in the negative moment region with an addition of steel rebar at the compression block. Jurnal Teknologi (Sciences and Engineering), 81(4), 143-154, 2019. ESCI and Scopus journal (Engineering)	日期 Date	Received in revised form 29 April 2019 Accepted 2 May 2019 Published online 25 June 2019
著作摘要 Abstract	A building whose functions are converted in which their volumes are improved, for example, a four-story building transformed into a five-story building, resulting in a dead load improvement of its structural self-weight, obviously requires strengthening in order to avoid the possibility of structural failures. This paper focuses on a nonlinear finite element analysis conducted using the ATENA program on T-section reinforced concrete beams strengthened in the negative moment region with wire ropes and an addition of steel rebars at the compression block. The results are then compared with the results of the previously conducted experiments. The specimen models consist of control beams (BK), strengthened beams with wire ropes at the tension block (BP1), and strengthened beams with wire ropes at the tension block and steel rebars at the compression block (BP2). The results show that the ratios of the load-carrying capacity against those of the experimental results are 1.25, 1.23, and 0.89 respectively for BK, BP1 and BP2. The effective stiffness ratios to those of the experimental results are 1.45, 1.15, and 1.86, while the ductility index ratios against the experimental results are 1.11, 0.63, and 1.01 respectively for BK, BP1, and BP2. The crack patterns of the nonlinear finite element analytical results revealed that all specimen models experience flexural failure.		
申請人完成部分或 貢獻說明 Contribution explanation or parts completed by	貢獻百分比 Contribution Proportion :	60%	




Outstanding Award applicant	<ul style="list-style-type: none"> - Conceived of the original and presented idea - Carried out the analysis - Wrote the manuscript with support from co-authors - Supervised the project 					
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申請人重要著作證明

The important published works of the past by the applicant to the
ResearchScholarship for International Graduate StudentsCertificate

著作名稱 Publication name	Maryoto, A.* , Hermanto, N. I. S., Sudibyoy, G. H., & Haryanto, Y. Usage of recycled tyre as reinforcement bars in precast beam-column joint. Malaysian Construction Research Journal, 29(3), 1-10, 2019. Scopus journal (Building and Construction)	日期 Date	
著作摘要 Abstract	Precast concrete beam with reinforcement bar of recycled tyres have a greater fracture energy as compared to the concrete beam without reinforcement bar. Connections between beams and columns plays an important role on precast concrete segmental to carry lateral load and axial load. This study aimed to determine the structural behaviour of beam-column joint. The specimen used as a beam with dimension of 700 x150 x 150 mm. The beam is connected with a connection model in the form of reinforced concrete columns. The reinforcement bar used is four plain steel bars with a diameter of 8 mm. The flexural strength test is conducted to determine the reliability of the joint connection. The total number of 3 specimens was designed, tested and analysed in this paper. The results show that the flexural failure occurred in the midspan of the beam. Connection joint remains stable without any cracks or damage. Model connections are shown that the steel bar diameter of 8 mm is safely being used to connect precast concrete with the recycled tyre reinforcement with minimal damage to beam-column joints and at mid-span.		
申請人完成部分或 貢獻說明 Contribution explanation or parts completed by	貢獻百分比 Contribution Proportion :	13%	




Outstanding Award applicant	- Aided in interpreting the results and worked on the manuscript					
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著作名稱 Publication name	Haryanto, Y.* , Hu, H.-T., Han, A. L., Hidayat, B. A., & Indriyati, E. W. On the performance of a multi story irregular apartment building model under seismic load in Indonesian moderately high seismicity region. Aceh International Journal of Science and Technology, 8(1), 1-11, 2019. Indonesia national accredited and DOAJ journal (Engineering)	日期 Date	Received : December 12, 2016 Accepted : February 10, 2019 Online : April 30, 2019
著作摘要 Abstract	Purbalingga is regency with a potential moderately high seismicity requiring compliance of planning and implementation rules of the earthquake-resistant structural system. The purpose of this research is to evaluate the performance of a ten-story irregular apartment building model in Purbalingga due to the seismic load. The research is necessarily conducted in order to provide information on impacts and mitigation strategies that should be implemented. This research was conducted based on the seismic load of 2002 and 2012 Indonesian National Standard (SNI) including linear static analysis, dynamic response analysis, and pushover analysis. Based on linear static analysis, it shows that the base shear is reduced and the drift ratio level decreases respectively for X and Y direction. Meanwhile, based on the dynamic response analysis, the drift ratio level also decreases respectively for X and Y direction. In addition, the pushover analysis indicates that the performance of this apartment building model is still at Immediate Occupancy (IO) level as the post-earthquake damage state that remains safe to occupy, essentially retains the pre-earthquake design strength and stiffness of the structure. The risk of lifethreatening injury as a result of structural damage is very low, and although some minor structural repairs may be appropriate, these would generally not be required prior to reoccupancy.		
申請人完成部分或 貢獻說明 Contribution explanation or parts completed by	貢獻百分比 Contribution Proportion :	60%	

Outstanding Award applicant	<ul style="list-style-type: none"> - Conceived of the original and presented idea - Carried out the analysis - Wrote the manuscript with support from co-authors - Supervised the project 					
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