

Response from the Beneficiary Entity: Please provide the official letter referencing the document number (either the response letter from the beneficiary entity or the initial contract) Please indicate whether a contract has been signed with the owner of the output, whether the output has been invested in or practically implemented, and provide any additional relevant information if available.	Beneficiary Institution (Ministry / Division / Department)	The product/output was commercialized in the years 2021 and 2022.	Names of the Researchers	Title of the Scientific	College	No.	
None	Not Contracted	The Sunni Waqf Directorate	2021	Asaad Muhammad Azhar Suhail Idris Abdulqader Khattab	Characterization of building materials used in the construction of historical Al-Omariya mosque minaret in Mosul's old city, Iraq	Civil Engineering	1
None	Not Contracted	Ministry of Culture	2021	Asaad Muhammad Azhar Suhail Idris Abdulqader Khattab	"Nimrud Archaeological Site: Facts and Solutions, Mosul - Iraq"	Civil Engineering	2
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2021	Prof. Dr. Abdulrahim Ibrahim Jasim	Performance of SBS-HMA Mixes Made with Sasobit and Zeolite	Civil Engineering	3
None	Contracted	Ministry of Works, Municipalities, and Housing	2021	Prof. Dr. Abdulrahim Ibrahim Jasim	Laboratory Investigation of Aged HDPE-Modified Asphalt Mixes	Civil Engineering	4
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2021	Prof. Dr. Abdulrahim Ibrahim Jasim	Effects of long-term aging on asphalt mixes containing SBS and PP-polymer	Civil Engineering	5
None	Contracted	Ministry of Works, Municipalities, and Housing	2021	Prof. Dr. Abdulrahim Ibrahim Jasim	Utilization of Citric Acid in Bituminous Paving Mixtures	Civil Engineering	6
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Ayman Abdulhadi Ahmed Mohammed Ghanem Jameel	USING THE ANALYTIC HIERARCHY PROCESS AND GIS FOR DECISION MAKING IN RURAL HIGHWAY ROUTE LOCATION	Civil Engineering	7
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Ayman Abdulhadi Ahmed Mohammed Ghanem Jameel Abdulkhaliq Mal Allah	Traffic flow parameters development modelling at traffic calming measures located on arterial roads	Civil Engineering	8
None	Not Contracted	The Sunni Waqf Directorate	2022	Asaad Muhammad Azhar Amina Ahmead Suhail Idris Abdulqader Khattab	From in situ investigation to FEM analysis: Application of Al-Hadba minaret foundation	Civil Engineering	9
None	Not Contracted	Ministry of Culture	2022	Asaad Muhammad Azhar Suhail Idris Abdulqader Khattab	Al-Hadba Minaret, a Contribution in Characterizing of its Brick	Civil Engineering	10
None	Not Contracted	The Sunni Waqf Directorate	2022	Asaad Muhammad Azhar Suhail Idris Abdulqader Khattab	Characterization of building materials used in the construction of historical Al-Omariya mosque minaret in Mosul's old city, Iraq	Civil Engineering	11
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Roua Suhail Zidan Tuqa Waleed Ahmed Ahmed A.Mohammed Ali	The combined effect of using recycled coarse aggregate and well water on normal concrete	Civil Engineering	12
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Ahmed A. Mohammed Ali Roua Suhail Zidan Tuqa Waleed Ahmed	Evaluation of high strength concrete made with recycled aggregate under effect of well water	Civil Engineering	13

None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Noor Yasser Younis, Dr. Ayman Abdulhadi Abdulmawgood, Amina Ahmed Khalil	"Prediction of Early Fatigue and Rutting in Flexible Pavement with Linear Layers Under Different Loading Conditions Using the Mechanistic-Empirical Method"	Civil Engineering	14
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Raghid Najib Abdullah, Sofyan Younis Ahmed	"Evaluation of Methods Used to Calculate the Structural Damage Index for Reinforced Concrete Structures Subjected to Various Earthquakes"	Civil Engineering	15
None	Not Contracted	Ministry of Transportation	2022	Imad Noeil Naoum	Dynamic Analysis of Reinforced Concrete Girder Bridges under Moving Loads	Civil Engineering	16
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Dr. Ayman Abdulhadi Abdulmawgood, Mohammed Ghanem Jameel, Dr. Abdulkhalil Mal Allah	Traffic flow parameters development modelling at traffic calming measures located on arterial roads	Civil Engineering	17
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Dr. Ayman Abdulhadi Ahmed Mohammed Ghanem Jameel	USING THE ANALYTIC HIERARCHY PROCESS AND GIS FOR DECISION MAKING IN RURAL HIGHWAY ROUTE LOCATION	Civil Engineering	18
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Dr. Khalaf Ibrahim Mohammed, Bashar Abdulazim Mahmoud	Finite Element Analysis for RC Deep Beams under an Eccentric Load	Civil Engineering	19
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Rifaa Dali Hamad, Dr. Khalaf Ibrahim Mohammed	Experimental Investigation on CFRP-Confined Low Strength Concrete after High-Temperatures Exposure	Civil Engineering	20
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Amr Mohamed Mohammed Sabri, Prof. Dr. Bayar Jafar Al-Sulaifani, Dr. Khalaf Ibrahim Mohammed	Numerical Study on Nonlinear Behavior of RC Continuous Deep Beams	Civil Engineering	21
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Mohammed Nawaf Jarjis Al-Zaidi	Experimental Study for Stabilizing Clayey Soil with Eggshell Powder and Plastic Wastes	Civil Engineering	22
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Rana Burhan Abdulrahman, Mohammed Nawaf Jarjis Al-Zaidi	Effect of Metal Tanks Wastes as Fibers on Some Concrete Properties	Civil Engineering	23
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Janan Rasheed Al-Feel, Nadia Sadiq Ismail	Properties of Self Compacting Concrete at Different Curing Condition and their Comparison with properties of Normal Concrete	Civil Engineering	24
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Amina Ahmed Khalil, Ali Nazzal Mohammed	Experimental Study of Bearing Capacity Effect in Swelling Soil	Civil Engineering	25
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Amina Ahmed Khalil, Dalal Awni Aldeen Ismail	Using of Vertical Barriers to Control an Industrial Contaminants Movement Through Soil	Civil Engineering	26
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Amina Ahmed Khalil, Jehan Mohammed Mar'i Al-Hayali	Design of Soil Nailing Wall – parametric Study	Civil Engineering	27
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Amina Ahmed Khalil, Rahma Hussein Ali	Design and selection optimum drainage system for an earth embankment	Civil Engineering	28
None	Not Contracted	Ministry of Works, Municipalities, and	2022	Zeina Adel Mohammed	"Effect of Adding Porcelain Waste as a Partial Replacement for Fine Aggregate on Some Engineering Properties of	Civil Engineering	29

None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Prof. Dr. Bayar Jafar Al-Sulaifani, Nuha Humidi Jassim, Ishtar Saleh Ahmed	Design Chart for Concrete Containing Recycled Coarse Aggregate	Civil Engineering	30
None	Not Contracted	Ministry of Industry and Minerals	2022	Ibtisam Hazem Hassan, Dr. Omar Mohammed Abdulkarim, Ahmed Yassin Shehab	"Utilization of Cement Kiln Dust (CKD) as a Partial Replacement for Cement in Mortar and Concrete"	Civil Engineering	31
None	Not Contracted	Ministry of Industry and Minerals	2022	Dr. Omar Mohammed Abdulkarim, Ibtisam Hazem Hassan, Ahmed Yassin Shehab	"Effect of Using Well Water as Mixing Water in Concrete"	Civil Engineering	32
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Dr. Suhaib Yahya Qasim, Qithar Abdulwahab Ibrahim	"Effect of Using Shredded Plastic on the Mechanical Properties of Concrete"	Civil Engineering	33
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Dr. Qithar Abdulwahab Ibrahim, Prof. Dr. Bayar Jafar Al-Sulaifani, Dr. Suhaib Yahya Al-Durzi	BEHAVIOR INVESTIGATION OF REINFORCED CONCRETE HALF-JOINT STRUCTURE SUPPORTS STEEL SECTION UNDER MONOTONIC AND REPEATED LOADS	Civil Engineering	34
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Dr. Qithar Abdulwahab Ibrahim, Dr. Suhaib Yahya Al-Durzi, Prof. Dr. Bayar Jafar Al-Sulaifani	Investigating the Effect of Different Type of Bearing Pad on the Behavior of Reinforced Concrete Half-Joint structure under Repeated Loads	Civil Engineering	35
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Dr. Qithar Abdulwahab Ibrahim, Prof. Dr. Bayar Jafar Al-Sulaifani, Dr. Suhaib Yahya Al-Durzi	"Strengthening a Half-Scale Joint of Reinforced Concrete Subjected to Repeated Loads"	Civil Engineering	36
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Dr. Qithar Abdulwahab Ibrahim, Prof. Dr. Bayar Jafar Al-Sulaifani, Dr. Suhaib Yahya Al-Durzi	INVESTIGATING THE EFFECT OF THE REPEATED LOADS ON THE BEHAVIOR OF JOINT IN A BRIDGE BETWEEN STEEL AND CONCRETE SECTIONS	Civil Engineering	37
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Prof. Dr. Suhail Idris Khattab, Dr. Qithar Abdulwahab Ibrahim, Assist. Prof. Amina Ahmed Khalil	Improvement of Soft Soil Properties Using Dynamic Compaction with Stone Columns: Case Study (AL-Mualla Site-Yeman)	Civil Engineering	38
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Riyadh Mahmoud Saleh, Abdullah Ismail Ibrahim, Mohammed Salem Shehab	Investigate the Effects of F to M MLSS and Metal to MLSS Ratio	Civil Engineering	39
None	Not Contracted	Ministry of Water Resources	2022	Prof. Dr. Suhail Idris Khattab, Amina Ahmed Khalil, Abdullah Ismail Ibrahim	Dissolved sulfate transport through soils in Al- Mishraq deposit	Civil Engineering	40
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Assist. Prof. Dr. Suhaib Yahya Qasim, Dr. Suhaib Yahya Qasim	Structural Evaluation of a Prestressed Box-Girder Bridge	الهندسة	41
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Dr. Suhaib Yahya Qasim, Omar Yasser Taqa	The Effect of Using Shredded Plastic on the Behavior of Reinforced Concrete Slab	Civil Engineering	42
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Dr. Suhaib Yahya Qasim, Prof. Dr. Bayar Jafar Mohammed	"Experimental Study of the Behavior of Steel Structural Joints Between Beams and Columns Subjected to Axial Loads"	Civil Engineering	43

None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Dr. Suhaib Yahya Qasim	"Rehabilitation and Repair of Buildings Damaged by Explosion Effects"	Civil Engineering	44
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Dr. Suhaib Yahya Qasim, Abdullah Ahmed Saadoun	"Effect of Repeated Loads on Composite Steel-High Strength Reinforced Concrete Beams"	Civil Engineering	45
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Zahraa Salah Salem Al-Obaidi, Dr. Suhaib Yahya Qasim, Dr. Uday Asal Saleh Hameed	"Study of the Behavior of Steel Structural Beam-Column Joints Using the Finite Element Method"	Civil Engineering	46
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Dr. Sofian Younis	"Evaluation of Bonding of Post-Installed Reinforcement Bars in Concrete"	Civil Engineering	47
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Ahmed Ibrahim Mohammed, Mohammed Nazim Jaro, Prof. Dr. Bayar Jafar Al-Sulaifani	Seismic Evaluation of Reinforced Concrete Frames Using Pushover Analysis	Civil Engineering	48
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Rifaa Dali Hamad, Khalaf Ibrahim Mohammed	Vertical Vibration of a Rigid Circular Foundations Resting on Soil Surface	Civil Engineering	49
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Hala Jasim Mohammed, Bayar Jafar Al-Sulaifani	Experimental Investigation on CFRP-Confined Low Strength Concrete after High-Temperatures Exposure	Civil Engineering	50

None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Hala Jasim Mohammed, Bayar Jafar Al-Sulaifani	"Behavior and Strength of (Compression-Compression-Tension) Arches Reinforced with Headed Bars in Fiber-Reinforced Concrete Beams"	Civil Engineering	51
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Bayar Jafar Mohammed Al-Sulaifani, Roaa Suhail Mohammed Zidan	"Behavior of Reinforced Concrete Beams with Carbon Fiber Strips"	Civil Engineering	52
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Halla Jasem Mohamad, Mohammed Najm Mahmoud	"Study of Flexural Behavior of Reinforced Concrete Beams Strengthened with Different Lengths of Carbon Fiber Reinforced Polymer Strips Using the Near-Surface Mounted	Civil Engineering	53
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Bayar Jafar Mohammed Al-Sulaifani, Roaa Suhail Mohammed Zidan	Effects of Base Isolation and Infill Panels on the Nonlinear Time History Analysis of Reinforced Concrete Building	Civil Engineering	54
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Bayar Jafar Mohammed Al-Sulaifani, Roaa Suhail Mohammed Zidan	"Study of Flexural Behavior of Reinforced Concrete Beams Strengthened with Carbon Fiber Reinforced Polymer (CFRP) Using the Near-Surface Mounted (NSM) Technique"	Civil Engineering	55
None	Not Contracted	Ministry of Transportation	2022	Dr. Moataz Abduljabbar Al-Obaidi, Zeina Ahmed Al-Qazzaz	Deterministic Extensional Viscosity and Cracking Index of Polypropylene-Modified-Asphalt Binder	Civil Engineering	56
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Amina Ahmed Khalil, Mohammed Nawaf Al-Zaidi, Zeina Ahmed Saleh	Analytical Study of Load- Settlement behavior of Soil Treated with Stone Columns Have Different Sectional Shape	Civil Engineering	57
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Moataz Abduljabbar Al-Obaidi, Mohammed Dhafer Abdulnafe, Orhan Atasoy	Bearing Capacity of Strip Footing on Lime Stabilized Expansive Clayey Soil	Civil Engineering	58
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Dr. Saad Anad Mohammed, Dr. Dia Ali Al-Naama, Dr. Majid Saleh Al-Hafidh	Improvement in Field CBR Values of Subgrade Soil Using Construction-Demolition Materials	Civil Engineering	59
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Muthanna Mohammed Saleh, Moataz Abduljabbar Al-Obaidi	Dynamic active power control in Mosul city ring system using ESTATCOM	Civil Engineering	60
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Saad Anad Mohammed, Dia Ali Al-Naama, Majid Saleh Al-Hafidh	Numerical Analysis of a Rectangular Footing Resting on Two Inclined Layers of Soil	Civil Engineering	61
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Zaid Fathi, Moataz Abduljabbar Al-Obaidi, Qutaibah Nizar Al-Saffar	Simultaneous active and reactive power control of ESTATCOM for improving mosul city ring system	Civil Engineering	62
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Ahmed Abduljabbar Mohammed Ali	Tunnel-Soil-Structure Interaction Under Seismic Load	Civil Engineering	63
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Ishtar Saleh Ahmed, Bayar Jafar Al-Sulaifani	"Analysis and Design of the College of Life Sciences Building for Medical Sciences"	Civil Engineering	64

None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Salwa Mubarak Abdullah	Strengthening and Rehabilitation of Concrete Prisms Using GFRP Sheets	Civil Engineering	65
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Salwa Mubarak Abdullah	STRENGTHENING OF ECCENTRICALLY LOADED REINFORCED CONCRETE COLUMNS USING FERROCEMENT OR CARBON FIBERS	Civil Engineering	66
None	Not Contracted	Ministry of Higher Education and	2022	Mohammed Yousif Fattah, Moataz Abduljabbar Al-Obaidi	FREE VIBRATIONS OF SIMPLY SUPPORTED BEAMS USING FOURIER SERIES	Civil Engineering	67
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Moataz Abduljabbar Al-Obaidi, Thamer Mohammed Nouri, Sinan Qais	EFFECT OF NUMBER OF PILES ON LOAD SHARING IN PILED RAFT FOUNDATION SYSTEM IN SATURATED GYPSEOUS SOIL	Civil Engineering	68
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Moataz Abduljabbar Al-Obaidi, Yusra Hassan Al-Jubouri	An Experimental Study of Rock Strength with Shallow Openings Under Uniaxial Compression	Civil Engineering	69
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Moataz Abduljabbar Al-Obaidi, Ibrahim Mahmoud Al-Kaiki, Abdulrahim Hani Al-Dawood	Numerical evaluation of rock strength with different sizes of circular opening	Civil Engineering	70
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Moataz Abduljabbar Al-Obaidi, Ibrahim Mahmoud Al-Kaiki, Abdulrahim Hani Al-Dawood	Effect of swelling on the shear strength behaviour of expansive soil	Civil Engineering	71
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Moataz Abduljabbar Al-Obaidi Narinda Samadiya Mahon Fleidkar	Characteristics of Three-Dimensional Flow around Underground Structures	Civil Engineering	72
None	Not Contracted	Ministry of Transportation	2022	Hamid Istifan Touzi Imad Noeil Naoum	The effect of subgrade reaction modulus on the nonlinear behavior of reinforced concrete plates	Civil Engineering	73
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Dr. Iman Khalid Ibrahim Jalu	EFFECT OF CRACK-REDUCING TECHNOLOGIES AND SUPPLEMENTARY CEMENTITIOUS MATERIALS ON SETTLEMENT CRACKING OF PLASTIC CONCRETE AND DURABILITY PERFORMANCE OF HARDENED CONCRETE	Civil Engineering	74
None	Not Contracted	Ministry of Works, Municipalities, and Housing	2022	Zina Adel Mohammed Rana Burhan Abdulrahman	The Effect of High Temperatures on the Engineering Properties of Lightweight Concrete Blocks	Civil Engineering	75
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Ashtar S. Al-Luhybi	The Effect Of A Variable Percentage Of Limestone Filler On Some Mechanical Properties Of Self-Compacting Concrete	Civil Engineering	76
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Salwa Mubarak Abdullah Rabee Moayad Najm Khalid Abdulaziz Zakaria	Comparison of Non-Destructive Testing Methods of Concrete With The Aid of Maturity Concept	Civil Engineering	77
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Baraa J. M. AL-Eliwi	Nonlinear Analysis of Reinforced High Strength Concrete Deep Beams With Openings	Civil Engineering	78

None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Sofyan Y. Ahmed Baraa J.M. AL-Eliwi	Nonlinear finite element analysis of concrete beams reinforced with polymer re-bars	Civil Engineering	79
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Baraa J.M. AL-Eliwi	Nonlinear Finite Element Analysis of Fibro -Ferrocrete Slabs	Civil Engineering	80
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Saad Altaan Baraa J.M. AL-Eliwi	Nonlinear Finite Elements Analysis of Partially Prestressed Fibrous Concrete Beams	Civil Engineering	81
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Baraa J.M. AL-Eliwi	Nonlinear Finite Elements Analysis of Partially Prestressed Fibrous Concrete Beams	Civil Engineering	82
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Baraa J.M. AL-Eliwi	Performance of recycled brick as coarse aggregate to produce self-compacted concrete	Civil Engineering	83
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Khalid Ahmed Abdullah Dr. Aziz Ibrahim Iyad Amjad Abdulrazzaq	A Study on the Feasibility of Using Treated Fibers as Alternatives to Reinforcing Steel	Civil Engineering	84
None	Not Contracted	Ministry of Higher Education and Scientific Research	2022	Khalid Ahmed Abdullah Aziz Ibrahim Abdullah Iyad Amjad Abdulrazzaq	Mechanical Properties of Polymer-Treated Jute Fiber Bars Reinforced with Carbon Fibers	Civil Engineering	85