






PERSONAL INFORMATION

Mohamed ElHagarey



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Sex Male | Date of birth 14/03/1978 | Nationality Egyptian

Dr. M. Elhagarey has a PhD at irrigation and drainage, 2010, He works as an Professor at the Desert Research Center, and a head of irrigation and drainage unit, Soil Conservation and Water Resources department, and recently he is a Egyptian PI of many international project such as **INNOVATIVE AND ENHANCED NATURE-BASED SOLUTIONS FOR SUSTAINABLE URBAN WATERCYCLE** in short **NICE** which funded by **H2020-EU**. And PI of research project **“Innovative and nature-based solutions to adapt to the climate in Egypt**, he was awarded **E&D Forum and AWC award of best water saving and reuse award, 2022**, **Kashida Prize** for Scientific Excellence in The Field of Agricultural and Bioengineering,2019, **“ICID WatSave Awards 2016”**under **‘WatSave Young Professional Award’** Also, he is the winner of **TWAS-ARO Young Arab Scientist (YAS) Prize 2016** with the topic **“The Implementation of Food Security Research for the Arab Region Sustainability”**, moreover, South-South Co-operation office of **UN (UNOSSC)** approved innovation SWMR as a solution for water crisis, and services a five of **UNSDGs**.

RESUME

He worked as vice president of Halayb and the Shalateen research station and the president of Al-Kantra Shark research station. He records many patents in hydraulics devices, especially in fluid mechanics and irrigation sciences. Dr. ElHagarey contributed in many international and national scientific projects, having many of international publications (Article researches, Books, Bulletins, Reports, posters, and journals), he revised a lot of article research in many science journals such as Agriculture-water- management and works in Africa, Asia and Europe in the scientific research fields. He contributed in scientific activity by American scientists; he has been a member of international and national Societies. Dr. ElHagarey is a consultant in many companies and committees. Recently he has been an Accreditation and Quality Assurance Bureau member in Desert Research Centre, Provisional Member of the Working Group on Water Saving in Irrigated Areas (WG-WATS, ICID), in addition to he has the training courses of Leadership development courses at the National Defence College, Nasser Higher Military Academy, Ministry of Defence. Postdoctoral/Dr(PhD)/Researcher/PhD of Agricultural sciences/ A working with strong scientific experiences and organizational skills gained in Associate prof., now seeking to move into Research and development project or postdoctoral position as a researcher or lecture.

JOB APPLIED FOR
POSITION
PREFERRED JOB
STUDIES APPLIED FOR
PERSONAL STATEMENT

WORK EXPERIENCE

- 9 March 2021 **Head of irrigation and drainage unit.**
- 20 November 2019 **Associate Professor in irrigation and drainage unite, soil conservation depart.**
- 30 May 2018 **Accreditation and Quality Assurance Bureau member & Document Control Officer in Desert Research Centre**
1 Mathaf El-Mataria St., El-Mataria, Cairo, Egypt. Postal code -11753-
Document Control Officer
- January 2015 -present **The president of Al-Kantra Shark research station**
Al-Kantra Shark, Al-Ismailia governorate
Management of the research station and the representative of Desert Research Centre President in the governorate.
- Feb. 2011- Nov. 2019 **Researcher (PhD)**
 Desert Research Centre (1 Mathaf El-Mataria St., El-Mataria, Cairo, Egypt. Postal code -11753-
<http://drc.gov.eg>)

 - Scientific investigation and sustainable development projects
 Soil and water resources conservation department, irrigation and drainage unit.
- May 2011-Feb. 2014 **Researcher (PhD) & vice president of Halayb and Shalateen Research Station**
 Desert Research Centre (1 Mathaf El-Mataria St., El-Mataria, Cairo, Egypt. Postal code -11753-
<http://drc.gov.eg>)

 - Scientific investigation and sustainable development projects
 Soil and water resources conservation department & Halayb and Shalateen Research Station
- 2003-2011 **Agriculture engineer**
 Desert Research Centre (1 Mathaf El-Mataria St., El-Mataria, Cairo, Egypt. Postal code -11753-
<http://drc.gov.eg>)

 - Scientific investigation and sustainable development projects
 Halayb and Shalateen Research Station
- 2001-2003 **Agriculture engineer**
 Desert Research Centre (1 Mathaf El-Mataria St., El-Mataria, Cairo, Egypt. Postal code -11753-
<http://drc.gov.eg>)

 - Scientific investigation and sustainable development projects
 Soil and water resources conservation department

EDUCATION AND TRAINING

- 2005-2010 **PhD of Agricultural engineering**
 Faculty of Agriculture- Ain-Shams University, Cairo, Egypt.

 - Machine design, irrigation and Drainage, soil and water relationship, bio system , machine economics and farm machine.
- 2000-2005 **MSc of Agricultural engineering**
 Faculty of Agriculture- Ain-Shams University, Cairo, Egypt.

 - Machine design, irrigation and Drainage, soil and water relationship, bio system , machine economics and farm machine.
- 2000-2005 **BSc of Agricultural engineering**
 Faculty of Agriculture- Ain-Shams University, Cairo, Egypt.

 - Machine design, irrigation and Drainage, soil and water relationship, bio system , machine economics and farm machine.

PERSONAL SKILLS

- Irrigation and drainage design, management, scheduling, innovation, statistical analysis, feasibility, ICDDL, Microsoft Office, Surfer program, SPSS program and Auto Cad.
- Mother tongue(s) Arabic

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	B1	B1	B2
TOEFL (501)					

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user

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Communication skills

- Good communication skills gained through my experience as a researcher in the scientific research and development.

Organisational / managerial skills

Working as a vice president of Halayb and Shalteen research station and responsible for a team of 25 people

Job-related skills

- Innovator of many patents related to the water irrigation devices.
- Good Committee member of Desert Research centre. (Currently responsible for irrigation development)
- Good Consultant of implementation, renovation and maintenance of the irrigation systems interests of many projects.
- Design and supervision of implementation, renovation and maintenance of the irrigation systems

Digital competence	SELF-ASSESSMENT				
	Information processing	Communication	Content creation	Safety	Problem solving
	INDEPENDENT USER	PROFICIENT USER	PROFICIENT USER	INDEPENDENT USER	INDEPENDENT USER

Levels: Basic user - Independent user - Proficient user

[Digital competences - Self-assessment grid](#)

Replace with your other computer skills. Specify in what context they were acquired. Example:

- Good command of office suite (word processor, spread sheet, presentation software)
- Good command of photo editing software gained as an amateur photographer
- Good command of the surfer program for drawing the layout of multiple patterns.
- Good command of SPSS program for statistical analysis.

Other skills

- Handmade of prototype of the innovative devices.
- Drawing.
- Sculpture.

ADDITIONAL INFORMATION

Publications

Article research

- Elhagarey, M.E. & Kashay, C. (2024). Environmental and economic returns for the development and management of innovations in modern irrigation systems in Egypt. Journal of Applied and Natural Science, 16(2), 653 - 662. [https:// doi.org/10.31018/jans.v16i2.5382](https://doi.org/10.31018/jans.v16i2.5382)
- Mohamed Elhagarey (2022); WATER SAVING OF RICE CROP USING INNOVATIVE TECHNIQUE FOR SOIL MANAGEMENT, SWMR Int. J. of Adv. Res. 10 (Feb). 1277-1291] (ISSN 2320-5407). www.journalijar.com
- Meselhy A. A. and **M. E. Elhagarey**.2021. Evaluation of prototype machine for planting discontinuous ridges to optimize efficiency of surface irrigation system in Ras sudr-South of Sinai. BIOSCIENCE RESEARCH, 2021 18 (1): 229-244.

- El-Boraie F.M., R.M.M. El Shafay and M.E. Elhagarey. 2021. MORPHOLOGICAL AND CHEMICAL CHARACTERIZES RESPONSES OF MORINGA OLEIFERA YIELD TO LOCALIZED IRRIGATION SYSTEMS, WATER RESTRICTION AND FERTILIZERS. Int. J. Adv. Res. 9(02), 509-523. DOI URL: <http://dx.doi.org/10.21474/IJAR01/12477>
- **Elhagarey M. E.** (2020). Field Evaluation of Innovative Follicular Drippers for raising of water use of water use efficiency under desert conditions. Plant Archives Volume 20 No. 2, 2020 pp. 8253-8260.
- **Elhagarey M. E.** (2020). Evaluating of drip irrigation systems for maximizing water use efficiency for garlic in desert soil in Al-Sadat in Egypt. Plant Archives Volume 20 No. 2, 2020 pp. 8253-8260
- Haytham M. Salem , Adil Meselhy , Mohamed Elhagarey , Ali M. Ali & Weicheng Wu (2020): Soil erosion control and wheat productivity are improved by a developed ridge-furrow and reservoir tillage systems, Archives of Agronomy and Soil Science,
- El-Boraie, F.M., R, M.M. El Shafay and **M. E. Elhagarey**. 2020. Integrated system for maximizing water unit productivity of Moringa vegetative yield under Shalatién conditions. BIOSCIENCE RESEARCH, 2020 17(3): 2298-2313.
- **Elhagarey M. E.** and Catalian Kashay. (2020). Environmental and economic returns for the development and management of new innovation in modern irrigation systems. 1st international Conference of Agricultural Engineering Faculty & 23rd of Misr society of Agricultural Engineering (Al-Azhar university 4-5 March2020).
- Meselhy A. A. , H. M. Salem and **M. E. Elhagarey**. (2019). Manufacturing of machine for crop cultivating under rainfed conditions. Bioscience Research, 2019 volume 16(4):3903-3926
- **Elhagarey M. E.** Hushki M. M. and Istvan Szabo. (2018). Using of MATLAB Program for Development of Sprinkler Irrigation Systems, The 13th International Conference of Egyptian Soil Science Society (ESSS)
- Attia, M. F., **M. E. El-Hagarey** , and I.E. Abed El-Rahman. Moisture Distribution Impact of Mini-Sprinkler on Mineral Fertilizers Use Efficiency, Growth, Fruit Yield and Quality of Apple Trees in Sandy Soil. Volume 11, Issue 2 Ver. I (February 2018), PP 85-102
- Sheren, A. Abed EL-Hamied., E. M. A. Zaen El-Deen; and **M. .E..El-Hagarey**. (2016). "Management of Irrigation Systems to Improve Productivity and Quality of Grapevine under Desert Conditions." IOSR Journal of Agriculture and Veterinary Science (IOSR-JAVS), vol. 10,no. 10, 2017, pp. 77–90.
- **El-Hagarey M. E.**, Hushki M. M. 2, Szabo I., (2017). Fuzzy Logic Model Approaches for Water Saving in Irrigation Systems. European Journal of Academic Essays 4(4): 157-165, 2017
- **El-Hagarey M. E.**, (2016), Save Irrigation Water using the Innovative Machine of Soil and Water Management for Rice Crop Cultivation (SWMR), ICID org. 1-7. http://www.icid.org/ws_youngprof_2016.pdf
- Elnesr, M. N, Alazba, A. A., **El-Hagary, M. E.** (2016). EFFECTS OF WATER DEFICIT AND APPLICATION METHOD, ON DRIP IRRIGATED PEACH. Agriculture & Forestry, Vol. 62 Issue 2: 119-136, 2016, Podgorica
- Mahmoud . A.k., A A Meselhy, M. .E..El-Hagarey. (2016). Wheat Production under Western North Coast Conditions Using A Simulation Model. Journal of Natural Sciences Research Vol..6 No.4, PP. 82-90.
- **El-Hagarey, M. E.**, El-Sabbagh, B. A. , F. Safranyik. Mathematical Model of Engineering and Hydraulic Design Factors of Innovative Pressure Compensating Pottery Dripper. European Journal of Academic Essays 3 (1): 7-20, 2016.
- Mahmoud . A.k., **M. .E..El-Hagarey**. (2015). Mathematical Model for Maximizing Irrigation Water Benefits. Journal of Natural Sciences Research Vol.5, No.16, PP. 95-104.
- Mansour, H. A., **El-Hagarey, M. E.**, Saad A., Ibrahim, E. A. And Bralts, V. F. (2015). Management of Sprinkler Irrigation System and Different Egyptian Wheat Varieties for I- Uniformity, Yield and Water Productivity. European Journal of Academic Essays 2(6): 7-13, 2015.
- Mansour, H. A., Saad A., Ibrahim, E. A. And **El-Hagarey, M. E.**, Management of Sprinkler Irrigation System and Different Egyptian Wheat Varieties II-Technological Quality Properties. European Journal of Academic Essays 2(6): 1-6, 2015.
- **El-Hagarey, M. E.** And Gyuricza, Cs. (2015). Drip Irrigation Flow Ratio Influence of the Spatiotemporal Distribution of Moisture, Salts and Temperature Related to Root Zone in Sandy Soil Model. European Journal of Academic Essays 2(1): 15-22, 2015
- **El-Hagarey, M. E.** , Mansour H. A. and Gyuricza, Cs. (2015).Economic Feasibility Analysis of Pressurized Irrigation Systems for Wheat under Desert Environmental Conditions. International Journal of Advanced Research, Volume 3, Issue 5, 903-917
- **El-Hagarey, M. E.**, Mansour, H. A., Gaballah, M. S. (2015). A Net-back, Revenues and Applied Energy Analysis of Irrigated Wheat Using Pressurized Irrigation Systems under Environmental Desert Multi-Criteria. European Journal of Academic Essays 2(1): 10-19.

- **El-Hagarey M. E.,** A.M.El-Kot; and A.M.El-Gindy. Movable Surface Irrigation System (MSIS) Design. (IOSR-JAVS). Volume 7, Issue 8 Ver. II (Aug. 2014), PP 01-10
- **El-Hagarey M. E.** M.N. ELNESR,, H. M. Mehanna and H. A. Mansour (2014). Energy, economic analysis and efficiencies of micro drip irrigation, II- Economic Analysis and efficiencies. (IOSR-JAVS). Volume 7, Issue 8 Ver. II (Aug. 2014), PP 19-26.
- **El-Hagarey M. E.** M.N. ELNESR,, H. M. Mehanna and H. A. Mansour (2014). Energy, economic analysis and efficiencies of micro drip irrigation, I-Energy Analysis. (IOSR-JAVS). Volume 7, Issue 8 Ver. II (Aug. 2014), PP 11-18.
- Meselhy, A. A. and **M. E. El-Hagarey**, Study the relationship between using of the modified ridger and efficiency of surface irrigation system in Ras-Sudr area , International Journal of Advanced Research (2014), Volume 2, Issue 7, 1121-1136.
- **El-Hagarey M. E.,** H. M. Mehanna and H. A. Mansour (2014). Movable Surface Irrigation System (MSIS) Impact on Spatial and Temporal Distribution of Soil Moisture and salinity. (IOSR-JAVS). Volume 7, Issue 6 Ver. III (Jun. 2014), PP 49-57.
- Omima M. E. and **M. E. El-Hagarey**, (2014), Evaluation of Ultra-low Drip Irrigation and Relationship between Moisture and Salts in Soil and Peach(prunsperssica) Yield. Journal of American Science 2014;10(8). PP 13-28
- **El-Hagarey M. E.** (2014). Design and Manufacture of Pottery Dripper for the Use of Saline Water in Irrigation Systems. (IOSR-JAVS). Volume 7, Issue 5 Ver. IV (May. 2014), PP 70-8o.
- **El-Hagarey. M. E.,** A.M. Al-Kot; and A.M. El-Gindy. (2013). Design of Auto-compensating nozzle for gated irrigation pipes. Egypt. J. Agric. Res., 91(2A),2013,pp, 113-132. 3rd International Conference of Agricultural & Bio-Engineering, Engineering application for sustainable agriculture development.
- Mansour H. A., Hany M. Mehanna, **M. E. El-Hagarey**,Ahmehd S. Hassan, Using Automation Controller System and Simulation Program for Testing Closed Circuits of Mini-Sprinkler Irrigation System,Open Journal of Modelling and Simulation, 2013, 1, 14-23.
- Mehanna. H.M.; Kh. P. Sabren and **M. S. Abdel-Rahman**, Validation of SALTMED Model under Different Conditions of Drought And N Fertilizer for Snap Bean In Delta, Egypt. Minia International Conference for Agriculture and irrigation in the Nile basin Countries.2011.
- **M. E. El-Hagarey.** A.M.El-Kot; and A.M.El-Gindy: Design of self-compensating nozzle for gated irrigation pipes. Published Agricultural and Biological Sciences (miscellaneous), Department of Agricultural Engineering, Faculty of Agriculture, Ain Shams University, 2010.http://srv5.eulc.edu.eg/eulc_v5/Libraries/start.aspx?fn=ApplySearch&ScopeID=1.&criteria1=2.&SearchText1=ABDEL-RAHMAN+%2CMOHAMED+EL-SAYED
- **M. E. El-Hagarey:** Design of self-compensating nozzle for gated irrigation pipes. published Ph. D. Thesis, Department of Agricultural Engineering, Faculty of Agriculture, Ain Shams University, 2009
- **M. E. El-Hagarey:** Design And Management of Low-Head Irrigation Systems, Unpublished M.Sc. Thesis, Department of Agricultural Engineering, Faculty of Agriculture, Ain Shams University, 2005. http://srv5.eulc.edu.eg/eulc_v5/Libraries/start.aspx?fn=ApplySearch&ScopeID=1.&criteria1=9.&SearchText1=Ain+Shams+.Agric.Agric.+Eng.
- **M. E. El-Hagarey.,** A.M.El-Kot; A.A.Abdel-Aziz; and A.M.El-Gindy Design And Management of Modified Pivot Irrigation Systems, Annals of Agricultural Science (Cairo) 2005 Vol. 50 No. 2 pp. 415-432.

- Sites
- https://icid-ciid.org/member/member_login_profile/870
 - <https://nice-nbs.eu/urban-real-labs/cairo-egypt>
 - <https://www.scopus.com/authid/detail.uri?authorId=57203620818>
 - <https://orcid.org/0000-0002-9530-0123>
 - <https://www.adscientificindex.com/scientist/mohamed-e-elhagarey/4631783>
 - <https://publons.com/researcher/2370641/mohamed-el-sayed-elhagarey/>
 - https://www.researchgate.net/profile/Mohamed_Elhagarey
 - https://scholar.google.com/eg/citations?hl=ar&user=hiYDCH8AAAAJ#d=gs_hdr_drw&p=&u=
 - <http://www.researcherid.com/ProfileView.action?returnCode=ROUTER.Unauthorized&Init=Yes&SrcApp=CR&queryString=KG0UuZjN5WkwsNoH4O%252BEmtkbgvdcivENMukk7Lqloms%253D>

Books & Reports

- https://icid-ciid.org/icid_data_web/Watsave_eBook2022_comp.pdf
- [Precision Agriculture Technologies for Food Security and Sustainability, chapter 9, Predictable Scenarios of Fuzzy Logic Analysis for Sprinkler Irrigation Control, Mohamed Elhagarey, Mohamed M. Hushki and Szabo E. Istvan. 2021, DOI: 10.4018/978-1-7998-5000-7.ch00](https://www.igi-global.com/chapter/predictable-scenarios-of-fuzzy-logic-analysis-for-sprinkler-irrigation-control/265208)
<https://www.igi-global.com/chapter/predictable-scenarios-of-fuzzy-logic-analysis-for-sprinkler-irrigation-control/265208>
- [Water saving in irrigated agriculture in Egypt. \(Case studied and learned lessons\) 978-620, case study5: save irrigation water using the innovative machine of soil and water management for rice crop cultivation \(SWMR\), 2017, LAP LAMBERT Academic Publishing](#)
- [Analysis of Globally Important Agricultural Heritage Systems, Desert Research Center \(GIAHS\) In Siwa Oasis, Egypt, \(2016\), Desert Research Center \(DRC\), Cairo, Egypt.](#)
- [Potential Use of Solar Energy and Emerging Technologies in Micro Irrigation, volum \(4\), by Apple Academic Press Inc. DECEMBER 2016.](#)
- [M. E. El-Hagarey , Innovative Movable Surface Irrigation Systems \(Modified Pivot\). Mohamed El-Hagarey, LAP LAMBERT Academic Publishing](#)
- [M. E. El-Hagarey , Innovative Automatic Self-Compensating Gated Irrigation Pipes, Mohamed El-Hagarey, LAP LAMBERT Academic.](#)
- [\[Water and Fertigation Management in Micro Irrigation\], Volume 9as part of book series on Research Advances in Sustainable Micro Irrigation by Apple Academic Press Inc. <http://appleacademicpress.com/title.php?id=9781771881067>.](#)
- [Management of Clogging in Micro Irrigation: Theory and Practices, as part of book series on Research Advances in Sustainable Micro Irrigation by Apple Academic Press Inc. \[Closed Circuit Trickle Irrigation Design, \\(Theory and Applications\\). Research Advances in Sustainable Micro Irrigation by Apple Academic Press Inc. Volume 7, August 2015, Senior\]\(#\)](#)
- [Innovations and challenges in Micro Irrigation, volum5, by Megh R. Goyal, Senior Editor – in – Chief to be published by Apple Academic Press, Inc.](#)
- [\[Micro Irrigation Management, Technological Advances and Their Applications\], Volume 5 as part of book series on Innovations and Challenges in Micro Irrigation Book Series by Apple Academic Press Inc.](#)

Press articles

- <https://gate.ahram.org.eg/News/3932459.aspx>
- <https://gate.ahram.org.eg/News/3763464.aspx>
- http://www.icid.org/ws_youngprof_2016.pdf
- <http://www.southsouthworld.org/component/k2/46-solution/2281/the-machine-of-soil-and-water-management-for-rice-crop-cultivation-swmr>
- <http://gate.ahram.org.eg/News/2612381.aspx>
- <https://greenfue.com/%d9%86%d8%b8%d8%a7%d9%85-%d8%b1%d9%8a-%d8%ac%d8%af%d9%8a%d8%af/>
- <https://www.scidev.net/mena/news/sand-mulches-increase-agricultural-efficiency-in-arid-regions/>
- <https://www.scidev.net/mena/news/water-distribution-system-maintain-flood-irrigation-egypt/>
- <https://www.scidev.net/mena/news/innovative-machine-rice-irrigation-save-water-fertilizers/>
- <https://www.scidev.net/mena/innovation/news/innovative-follicular-drippers-irrigation-system/>
- <https://www.scidev.net/mena/agriculture/news/Launch-International-Network-Salt-Affected-Soils.html>
- <https://www.elmwatin.com/600568/-باحث-مصري-ينجح-في-ابتكار-طريقة-جديدة-لري-الموز-توفر-المياه>
- <https://www.scidev.net/mena/news/mobile-unit-irrigation-smallholder-solar-energy/>
- <https://www.elwatannews.com/news/details/4573910>
- <https://www.elaard.com/75779>
- https://www.elaard.com/58108?fbclid=IwAR1BCWZ99474LyA8Ek-uFcSSy8txHc-hbx_P7zRy-dfQAhV5eV/xhRoHPHU
- <http://www.thisisbrainy.com/egypt-creates-machine-to-cut-rice-irrigation-water-by-half/>
- <https://www.al-fanamedia.org/2017/11/water-scarce-egypt-research-funds/>
- <https://www.al-fanamedia.org/ar/2017/11/بحوث-حديثة-لحملة-موارد-مصر-المائية/>
- http://www.icid.org/watsave_past.html
- <https://www.express.pk/story/727593/>
- <http://bibalex.org/TWAS-ARO/en/Prize/Details.aspx?prizeID=1026>

- <https://www.scidev.net/mena/design/news/Innovative-machine-rice-irrigation-save-water-fertilizers.html>
- <http://agri.ahram.org.eg/NewsContent/55369/-التقارير/بالصور-باحث-مصري-يحمد-المركز-الأول-عالمياً-لايتكار.aspx>
- <http://muslim-science.com/egypt-rice-machine/>
- <https://www.elnabaa.net/825940>

YOUTUBE

- <https://www.youtube.com/watch?v=5amH2kA-nr4>
- <https://www.youtube.com/watch?v=EEEnSfJaMHA&t=29s>
- <https://www.youtube.com/watch?v=EEEnSfJaMHA>
- <https://www.youtube.com/watch?v=uiNxuARZmhc>
- <https://drive.google.com/file/d/1A3Is2sTfBK7JglBowHi3FTNuWHN-TLkS/view?usp=sharing>

Projects

- PI of the project "Optimal management of water, energy, food and environmental systems links using innovations and nature-based solutions in some countries of the Arab world" in a joint alliance between Egypt, Iraq, Morocco, Tunisia and Oman. Funded by Federation of Arab Scientific Research Councils (FASRC), . ARICA, 2024-2025.
- PI of Demonstration and Promotion of the Soil Salinization Controlling by Advanced Micro-irrigation Technologies, funded by Chinese Academy of Sciences.
- PI of INNOVATIVE AND ENHANCED NATURE-BASED SOLUTIONS FOR SUSTAINABLE URBAN WATERCYCLE in short NICE which funded by H2020-EU. PI
- PI of "Innovative solutions to enhance the use of unconventional water for irrigation in El-Moghra, ISWIM.
- PI of Innovative and nature-based solutions to adapt the climate changes in Egypt.
- The sustainable development of Sinai peninsula lands.
- The development of cultivation and production jobba to combat desertification in Sinai land
- Analysis of Globally Important Agricultural Heritage Systems (GIAHS)" in Siwa Oasis, Egypt.
- Balanced Fertilization of Major crops in Egypt
- Precision Estimation of Water Requirements for Some Crops during Kc Determination under Egyptian Conditions New Lands
- Community Development Project Western Sahara nomads Red Sea Governorate of the Ministry of Agriculture and the Food Aid (United Nations), WFP, (2003).
- Transfer Project field irrigation techniques of the Faculty of Agriculture, Ain Shams University and the University of Arizonan America A. T. U. T (2000).

Conferences and training courses

- SECOND HIGH-LEVEL UNITED NATIONS CONFERENCE ON SOUTH-SOUTH COOPERATION (BAPA+40 CONFERENCE), 19-22 March 2019.
- 5th General Assembly of the Arab Water Council, 2nd Announcement, 16-17 Marh 2019.
- Decision-makers, National Defence College, Nasser Higher Military Academy, Ministry of Defence.
- Crisis management and negotiation, National Defence College, Nasser Higher Military Academy, Ministry of Defence, 2018.
- Strategic Studies and National Security, National Defence College, Nasser Higher Military Academy, Ministry of Defence, 2018.
- WATER AND ENERGY IN MEDITERRANEAN RURAL ENVIRONMENTS: THE NEXUS IN IRRIGATED AGRICULTURE, (CIHEAM), (IAMZ), Zaragoza, Spain, 2018.
- Balanced development of "SIWA-OASIS" on the international tourism map, Cairo, Egypt, 2018.
- Sino Egypt forum for joint research, Wuhan, China, 2017.
- 67th IEC Meeting, ICID, Chiang Mai, Thailand, 2016.
- Second water irrigation forum, Chiang Mai, Thailand, 2016.
- Using E-views Programs in Statistical Applications.
- The third international conference of Egyptian soil sciences
- Principal of Projects Preparation and Submitting for Grants.
- Integrated assessment of Irrigated farming systems.
- The first international conference 'Food and Agriculture: New Approaches'
- Engineering application for sustainable agriculture development.

- Agricultural development in Sinai
- Workshop entitled "Managing resources of the Nile River," by Dr. Mahmoud Abu Zeid.
- Spate irrigation and water management under drought conditions and water scarcity
- Lecture "rationalization of energy consumption for different irrigation systems" Training Course.
- Training Course Centre under the title "Development of New Valley between the obstacles and challenges".
- Water-hackathone. AUC, Cairo Egypt, 2011
- Agricultural engineering conference. AlAzhar University, Cairo, 2012.

Honours and awards

- Best water saving and reuse from E&D and AWC award, 2022.
- ICID WatSave Awards 2016"under 'WatSave Young Professional Award,2016
- TWAS-ARO Young Arab Scientist (YAS) Prize 2016 with the topic "The Implementation of Food Security Research for the Arab Region Sustainability",2016
- Kashida Prize for Scientific Excellence in The Field of Agricultural and Bioengineering,2019
- The honour plaque and certificate of quality assurance and Accreditation office for granted second patent, 2020.
- The honour plaque of Desert research centre president in 70 years of DRC establishing.
- The honour certificate of Economic and Social Studies Division of Desert Research centre for the role to grant ISO 9001:2015 for DRC.
- The honour plaque and certificate of Club Members of Research Corporation in Desert Research Center.2020. for the role to grant the DRC ISO9001:2015.
- The honour plaque of Desert research centre president for the wining of ICID AWARD, 2017.

Memberships

- Arab water council, AWC, Membership No 856
- Working Group on Water Saving in Irrigated Areas (WG-WATS, ICID).
- Egyptian Society of Agricultural Engineering (ESAE)
- Egyptian Association for Soil Sciences (EASS)
- African Crop Science Society (ACSS)
- Netherlands fellowship Program (NFP) Alumni
- Club Members of Research Corporation in Desert Research Center.
- Egyptian Society for Information Systems.
- Irrigation association (IA).

Patents

- Soil and water management machine, (SWMR) has the ICID watsave award for YP, 2016, **Patent No 28832 Egypt.**
- AUTOMATIC HYDRAULIC WATER NOZZLE, **Patent No 29538 Egypt.**
- Follicular irrigation dripper from earth materials, **EG/P/2019/155.**
- Self-cleaning Hydraulic Automatic Screen Filter, **EG/P/1805/2014.**
- Magnetic localized irrigation Outlets, **EG/P/2021/1892**
- Cylinder irrigation emitters with opposite spiral paths, Self-regulating, self-cleaning and anti-clogging. **EG/P/2022/963**
- pottery granules, **EG/P/2022/953**

Professional references

- Dr. Aballah zaghloI Kasem, The vice president of DRC, 00201004312280
- Prof. Dr. M.H.Amer, Former director of ENCID (Egyptian national commission for irrigation and drainage,0020244464505/00201001649861, dr-mh-amer@hotmail.com.
- Prof.Dr. M.W.Shehata, Former director of ENCID (Egyptian national commission for irrigation and drainage, 0020244464505/00201003965239, mshahba@hotmail.com.





United Nations
Office for South-South Cooperation

23 April 2019

Dear Dr. Mohamed Elhagarey,

I would like to take this opportunity to express, on behalf of the Regional Division for Arab States, Europe and the CIS of the United Nations Office for South-South Cooperation, our gratitude for your contribution to the joint TÍKA-SESRIC-UNDP-UNOSSC side-event on Private Sector Engagement in South-South and Triangular Cooperation that took place on 20 March 2019 on the sidelines of the Second High-level United Nations Conference on South-South Cooperation (BAPA+40 Conference) in Buenos- Aires, Argentina.

I am very pleased to note that your presentation on Saving Irrigation Water and Nutrients Using the Innovative Machine of Soil and Water Management for Rice Crop Cultivation has been very well received by the event participants.

I would also like to kindly confirm that your presentation was uploaded to the online solutions portal featuring home-grown solutions from the Global South and is available at: <http://www.southsouthworld.org/component/k2/46-solution/2281/the-machine-of-soil-and-water-management-for-rice-crop-cultivation-swmr>. Please let us know in the course of next week, in case you would like anything changed in the way solution is presented.

Thank you very much for your cooperation and support,
Kind regards,



Edem Bakhshish
Chief, Division for Arab States, Europe and the CIS
United Nations Office for South-South Cooperation

**ICID•CIID**

International Commission on Irrigation and Drainage

• Commission Internationale des Irrigations et du Drainage

Ref.No. IC(96)/WatSaveAwards2016

Dated 25 November 2016

TO WHOM IT MAY CONCERN

This is to certify that Dr. Mohamed El-Hagarey (Egypt) is the winner of ICID's WatSave Award 2016 under the category of "WatSave Young professional Award".

He is awarded for the outstanding innovation titled "Save Irrigation Water Using the Innovative Machine of Soil and Water Management for Rice Crop Cultivation (SWMR)".

The Award, carrying a Citation and US\$ 2000 as Prize money were given to Dr. Mohamed El-Hagarey during 67th International Executive Council (IEC) Meeting held on 8 November 2016 in Chiang Mai, Thailand



Vijay K. Labhsetwar, PhD
Director

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The World Academy of Sciences
for the advancement of science in developing countries (TWAS)
and
The TWAS Arab Regional Office (TWAS-ARO)
Award

Dr. Mohamed ElHagarey

The TWAS Regional Prize for Young Arab Scientists (YAS) Prize 2016
for

The Implementation of Food Security Research for the Arab Region Sustainability



Dr. Ismail Serageldin
TWAS-ARO Coordinator
Director, Bibliotheca Alexandrina



MSAE

**Misr Society of
Agricultural Engineering**

Kashida Prize

for

Scientific Excellence

in the Field of Agricultural and Bioengineering

at Researchers-Level

to

Dr. MOHAMED ELHAGAREY

Researcher (PhD), Desert Research Center, Cairo, Egypt.

During the 22nd International Conference of the MSAE,
in Cooperation with Department of Agricultural Engineering,
Faculty of Agriculture, Ain Shams University

Under the Title of

Agricultural and Bioengineering among Capabilities and Challenges

2nd Feb. 2019

Endorsed by

M. N. El-Awady

Prof. Dr. \ M. N. El-Awady

President; MSAE



Dr. Ahmed Faisal

M. M. Hegazi

Prof. Dr. \ M. M. Hegazi

Coordinator; Conference


وزارة التعليم العالي والبحث العلمي
 MINISTRY OF HIGHER EDUCATION
 AND SCIENTIFIC RESEARCH


أكاديمية البحث العلمي والتكنولوجيا
 ACADEMY OF SCIENTIFIC RESEARCH
 AND TECHNOLOGY

براءة اختراع رقم : ٢٩٥٣٨

رئيس أكاديمية البحث العلمي والتكنولوجيا بعد الإطلاع على المادة (١٩) من قانون حماية الملكية الفكرية الصادر بالقانون رقم ٨٢ لسنة ٢٠٠٢، وعلى قرار رئيس الجمهورية رقم ٣٧٧ لسنة ١٩٩٨ بإعادة تنظيم أكاديمية البحث العلمي والتكنولوجيا، وعلى طلب البراءة المقدم تحت رقم ١٧٣٦ في ٢٠١٤ والمستندات الملحقة به، قرر:

مادة (١) : تمنح براءة اختراع تحت رقم ٢٩٥٣٨
 التي : الأستاذ/ محمد السيد عبد الرحمن البيومي الحجري
 المركز العلم : شارع التحرير - الدقى - الجيزة - جمهورية مصر العربية
 عن اختراع تحت مسمى : مخرج توزيع مياه أوتوماتيكي هيدروليكي
 اسم المخترع : الأستاذ/ محمد السيد عبد الرحمن البيومي الحجري
 مدة البراءة : عشرون عاماً تبدأ من يوم ٢٩/١٠/٢٠١٤ ، وقد في توضيح بياناتها الوثائق المعتمدة المرفقة بهذه الشهادة،
 مادة (٢) : صدر هذا القرار بالقاهرة في ١١ نوفمبر ٢٠١٩
 مادة (٣) : على الجهة المختصة نشره في جريدة براءات الاختراع

قائم بأعمال
 رئيس مكتب براءات الاختراع
 "د.منى محمد يحيى"

رئيس
 أكاديمية البحث العلمي والتكنولوجيا
 "د.محمود محمد صفير"



Patents	Status	Target	SDG	External energy	Auto	cost	Environment friend	Water	Fertilizers	Energy	GHG	Modification
SWMR	done	Saving water & fertilizers	1, 2, 8, 9, 13.	No	No	economic	yes	Save 50%	Save 25%	No save	Decrease	available
Self-compensating nozzle for surface irrigation	done	Raising the irrigation efficiency	8, 9	No	yes	economic	yes	No	No	No	Nil	available
Natural sensor drippers	Under field tests	Saving water & fertilizer & work based on MC	8, 9, 13	No	yes	economic	yes	Save 50%	Save 25%	Save 80% of operating energy	Decrease	available
Ultra low flow drippers	Under fields tests	Save water & Self-compensating flow	8, 9, 13	No	yes	economic	yes	Save 50%	Save 25%	Save 80% of operating energy	Decrease	available
Desalination drippers	Under fields tests	Reduce the EC of water according to MC of soil	8, 9, 13	No	yes	economic	yes	Save 50%	Save 25%	Save 80% of operating energy	Decrease	available
Heart back flow valve	Under lab tests	On / off according to MC of soil	8, 9, 13	No	yes	economic	yes				Decrease	available
Alternative nozzle for surface irrigation	Under lab tests	Activate alternative furrow irrigation	8, 9, 13	No	yes	economic	yes	yes	yes	yes	Nil	available
self-cleaning screen filter	Under manufacture of prototype	Increase drip irrigation efficiency	8, 9, 13	No	yes	economic	yes	No	No	yes	Decrease	available
Day and night flow valve	Under design	On / off according to day and night	8, 9, 13	No	yes	economic	yes	yes	yes	yes	Decrease	available
Hydraulic rotor	Under lab tests	Increase sprinkler efficiency during overlap	8, 9, 13	No	yes	economic	yes	yes	yes	yes	Decrease	available
Day and night	Under	On / off according to	8, 9, 13	No	yes	economic	yes	yes	yes	yes	Decrease	available

flow valve	design	day and night											
Automated surge valve	manufacture of prototype	On /off according to time cycle	8, 9, 13	No	yes	economic	yes	yes	yes	yes	Decrease	available	