

# AHMED ELSAYED IBRAHIM GOMAA

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Date of birth: Nov 29, 1985 (31 years)

## PERSONAL PROFILE

A Biotechnologist has experience in genetic and molecular biology aspects, gene regulation network and biofuel production from microorganisms. Ahmed has spent the latest 6 years (2010-2016) abroad to improve his knowledge about molecular science, which has been documented in several international conferences and journals.

## RESEARCH INTERESTS

Gene regulation network and regulatory RNAs (Structure, Function, and mechanism) in microorganisms. My interest includes developing research methodologies (Shortcuts) to facilitate the ongoing research.

## EDUCATION

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2013 - 2017: PhD studies, Biotechnology Research Institute, **Chinese Academy of Agriculture Science (CAAS), Beijing, China.**

2011 - 2013: M.Sc Degree, Chemical and Biotechnology Engineering Dept., **Chonnam National University (CNU), Yeosu, South Korea.**  
GPA Score: 4.39/4.5

2008 - 2009: Pre-Master courses, Microbiology Dept., **Alexandria University, Alexandria, Egypt.**

2003 - 2007: B.Sc Degree, Botany and Microbiology Dept., Faculty of Science, **Al-Azhar university, Egypt.**  
Score: 83% with honor grade (First rank student).

## **AWARDS AND FELLOWSHIPS**

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2013: Full and partial scholarships for PhD studies offered by;

- 1- Yuan Ze University (YZU), Taiwan. (Full Scholarship)
- 2- China Scholar Council (CSC), Chinese academy of agricultural sciences, Beijing, China. (Full Scholarship)
- 3- Biotechnology research institute, University Malaysia Sabah, Kota Kinabalu, Malaysia. (Partial)

2012: Permanent staff membership in Botany department for first rank student, faculty of Science, offered by Al-Azhar university, Egypt.

2011: Waiver of half of the tuition fees for the second semester based on the Excellent records of the first semester, Chonnam National university, Yeosu, South Korea.

2010: Admission for Master studies and Research Assistant position offered by;

- 1- Chonnam National university, South Korea.
- 2- Gangneung-Wonju National University, South Korea.

2008: Research assistant temporary position for excellence offered by Protein research Dept., City of science and technology, Egypt.

2007: B.Sc. course award for first rank within Biology major and sixth rank within four basic science departments in Faculty of science, Al-Azhar University, Assiut, Egypt.

2006: Undergraduate course award for excellent record student in third grade, Faculty of science, Al-Azhar University, Egypt.

## **WORK EXPERIENCE**

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2011- 2013: Teaching assistant for Biology practical course (Freshman students) and Genetics and molecular biology course (fourth grade students), in Plant Biotechnology Lab, Chemical and Biotechnology Department, Faculty of Engineering, Chonnam National university, South Korea.

2008 - 2010: Lab specialist and research assistant in Nucleic Acid Research Dept., Genetic Engineering and Biotechnology Research institute, Mubarak City for Scientific Research and Technology Applications Alexandria, Egypt.

## SKILLS

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Languages: Arabic (native); English (Very Good), Korean (level one), Chinese (level one)

Computer: Microsoft Office, Statistical Analyses System (SPSS, Graph-pad Prism, Easy fit); Graphics (3Ds max, adobe Photoshop); Programming (**Visual basic 6, .net, and C#**), game engines; **3D STATE engine, Unity3D**, Virtual reality (**Oculus rift**) **Soft-developer**,

**Arduino** microcontroller kit.

Bioinformatics Softs (eg. Primer designs, genetic annotation, protein design, simulations and analysis, Biomolecular structure predictions, and other biomolecular analysis software).

Laboratory: General microbiological techniques, Agarose, SDS- ,Urea- and Native PAGEs, Protein manipulation, Western blotting.

RAPD, overlapping, nested & Specific-PCR, in-vitro transcription.

Cloning techniques, DNA-Cassette constructions, and fully plasmid vector constructions.

Genetic transformation\ Transfection (Heat shock, Electroporation “Eppendorf and BioRad systems”, **Microinjection** “Nikon with Narishige system”).

**FACS Calibur** flow cytometry (without sorting) and **BD FACSJazz. Akta Pure**, and **Akta purifier** have been used professionally with size exclusive columns (Superdex 200 increase and 75, and Anion-exchange Q-Hi Trap), **Circular Dichroism** been used with protein and RNA.

**My experience is about RNA, DNA, and proteins screening, purification, and structure analyses (> 1 year experience).**

Algae and bacteria isolation; purification; morphological and DNA-Based identification; cultivation, genetic modification and oil extraction.

Others: Microbial fuel cell (MFC) construction, Automated photobioreactor designs, Automated bacterial bioreactor designs.

## OTHER INTERESTS

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Game programming, Psychology and Cognitive therapy, Genetics and Human behavior genetics, virtual education and graphical simulations.

## CONFERENCES, PATENT AND PUBLICATIONS

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### Meetings during M.Sc study:

- 1- Gyuhwa CHUNG, Ahmed E. GOMAA, E.E. HAFEZ1 and Hyun Soo LIM. "Optimization of Microalgae Growth Rate and Oil Content using Human Insulin and Triton WR 1339." Bioenergy Korea Conference 2011 International Symposium. March 16- 18, 2011. Gwangju, Korea. (Poster presentation)
- 2- Gyuhwa CHUNG, Ahmed E. GOMAA, E.E. HAFEZ1 and Hyun Soo LIM. "Optimization of Microalgae Growth Rate and Oil Content using Human Insulin and Triton WR 1339." The Korean Society for Biotechnology and Bioengineering (KSBB) Spring Meeting, Apr 14, 2011, Jeju, Korea. (Poster presentation)
- 3- Gyuhwa CHUNG, Ahmed E. GOMAA and Hyun Soo LIM. "Electrotransformation of Mixed Algae Culture with Glycerol-3-Phosphate Dehydrogenase Gene from *Saccharomyces cerevisiae* using PIRE2-EGFP Vector. " The Korean Society for Biotechnology and Bioengineering (KSBB) Spring Meeting, Apr 14, 2011, Jeju, Korea. (Poster presentation)
- 4- G. Chung<sup>1</sup>, E. E. Hafez<sup>2</sup>, A. E. Gomaa<sup>1</sup>. "Physiological studies on microalgal culture additives to optimize growth rate and oil content." The 4th Congress of the International Society for Applied Phycology, 19–24 June 2011, Halifax, Canada. (Poster presentation)
- 5- G. Chung<sup>1</sup>, E. E. Hafez<sup>2</sup>, A. E. Gomaa<sup>1</sup>. "Effect of glycerol-3-phosphate dehydrogenase gene (GPD1) from baker yeast on algae oil content by electrotransformation of mixed algae culture with GPD1-PIRES2-EGFP." The 4th Congress of the International Society for Applied Phycology, 19–24 June 2011, Halifax, Canada. (Poster presentation)
- 6- Ahmed E. Gomaa 1, Sang Mi Sun 1, Seung Hwan Yang 2, Gyuhwa Chung. " Stable transformation of microalgae *Scenedesmus* sp. using SV40 large T-antigen. " 15th international Biotechnology symposium and exhibition (IBS 2012), September 16-21, 2012. EXCO, Daegu, Korea. (Poster presentation)
- 7- A.E. Gomaa, S.H. Yang, S.M. Sun1 and G. Chung. "Effect of SV40 Large T-antigen on the Vector Stability in Microalga *Scenedesmus* sp. 10th international congress on plant molecular biology ICC jeju, Jeju, Korea. October 21(Sun) - 26(Fri), 2012. (Poster presentation)

8- S.H. Yang, A.E. Gomaa, S.M. Sun and G. Chung. "Toxic Effect of the Overexpressed Large-T Antigen in Microalgae *Chlorella* sp." 10th international congress on plant molecular biology ICC jeju, Jeju, Korea. October 21(Sun) - 26(Fri), 2012. (Poster presentation)

9- S.M. Sun, A.E. Gomaa, S.H. Yang and G. Chung." An Easy PCR-Based Genome-Walking Method for Getting the Unknown Flanking Sequences. "10th international congress on plant molecular biology ICC jeju, Jeju, Korea. October 21(Sun) - 26(Fri), 2012. (Poster presentation)

10- Ahmed E. Gomaa, Seung Hwan Yang, Sang MiSun, Gyuhwa Chung. "Nuclear localization signal (NLS) of Simian virus 40 for a stable genetic transformation of *Chlorella* sp." 10th Asian Fisheries and Aquaculture Forum(10AFAF), Yeosu, Korea, April 30- May 4 (2013). (Poster presentation)

11- Ahmed E. Gomaa, Seung Hwan Yang, Sang Mi Sun, Hyun Soo Lim, GyuhwaChung. "Multigene approaches to increase the growth rate and lipid productivity in *Scenedesmus quadricauda*." 10th Asian Fisheries and Aquaculture Forum(10AFAF), Yeosu, Korea, April 30- May 4 (2013). (Poster presentation)

#### **Meetings during PhD study:**

1- Ahmed E. Gomaa, Yongliang Yan, Min Lin. "Revealing short non-coding RNA's secondary structure using MicroScale Thermophoresis in semi-native conditions". Cold Spring Harbor Asia (CSH), Suzhou, China, Nov-2016. (Oral presentation)

#### **Patents:**

New method for harvesting of algae from water" (code No. 26053 Egypt).

#### **Master degree Publications:**

1- Gomaa AE, Hafez EE, Lim HS, et al (2012) Physiological studies on microalgal culture additives to optimize growth rate and oil content. *Bioprocess Biosyst Eng* 35:135–43.

2- Gomaa AE, Kim JM, Yang SH, Chung G (2015) An easy PCR-based genome-walking method for getting the unknown 5' flanking region of a *Scenedesmus* sp. *J Coast Life Med* 3:348–351.

3- Gomaa A, Lee S, Sun S, et al (2015) Development of stable marker-free nuclear transformation strategy in the green microalga *Chlorella vulgaris*. *African J. Biotechnol.* 14:2715–2723.

- 4- Gomaa AE, Yang SH, Sun SM, Chung G (2015) Direct Cloning Protocol for Rapid Transformant Selection. Res J Microbiol 10:551–556. doi: 10.3923/jm.2015.551.556
- 5- Gomaa AE, Lee S-K, Sun SM, et al (2015) Improvement in Oil Production by Increasing Malonyl-CoA and Glycerol-3-Phosphate Pools in *Scenedesmus quadricauda*. Indian J Microbiol 55:447–55.

**PhD Publications:**

- 1- Gomaa AE, Deng Z, Yang Z, Shang L, Zhan Y, Lu W, Lin M, and Yan Y (2016) High-frequency Targeted Mutagenesis in *Pseudomonas stutzeri* Using a Vector-Free Allele Exchange Protocol. J. Microbiol. Biotechnol
- 2- Gomaa AE, Deng Z, Yang Z, Shang L, Zhan Y, Lu W, Lin M, and Yan Y (2016) Revealing short non-coding RNA's secondary structure using MicroScale Thermophoresis in semi-native conditions. (Preparing).
- 3- Gomaa AE, Deng Z, Yang Z, Shang L, Zhan Y, Lu W, Lin M, and Yan Y (2016) Structure and functional characterization of Novel short non-coding RNA 31 from *Pseudomonas stutzeri*. (Preparing).