

WAGUIH ISHAK, PH.D.

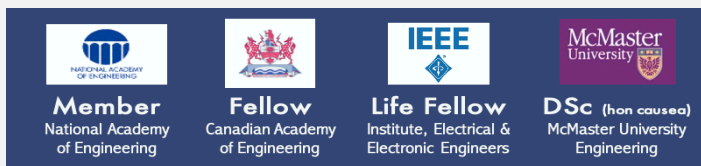
✉ waguih.ishak@gmail.com

☎ (650) 283-5501

📍 Cupertino, CA 95014

🌐 www.linkedin.com/in/waguih-ishak-8176ab4

PROFESSIONAL SUMMARY & HONORS



- Experienced Chief Technologist with solid track record of building global R&D organizations at scale with teamwork culture.
- Evangelist and leader in technology management and innovations.
- Strong connections with VCs, startups, academia and national labs.
- My teams (at four companies) generated >1000 patents and transferred R&D technologies with multi \$ Billion in revenues.

INTERESTED IN

- R&D executive positions.
- Board memberships.
- VC partner positions.

TECHNICAL SKILLS

- Integrated photonics & optoelectronics.
- High-speed mixed signal ICs.
- Display technologies.
- Metamaterials.
- Semiconductor devices.
- Acoustic devices.

SOFT SKILLS

- Chief technologist.
- Evangelist for R&D innovations.
- Moves technology from R to D to M.
- Organization builder & connector.
- Coach & Mentor.
- Evaluating startups.
- Motivating global speaker.

EDUCATION

- 2018: D.Sc., *Honoris Causa*, McMaster University, Canada.
- 1999: Stanford Executive Program, Stanford University, CA, USA.
- 1978: Ph.D. Electrical Engineering, McMaster University, Canada.
- 1975: M.Sc. Electrical Engineering, McMaster University, Canada.
- 1973: B.Sc. Pure Mathematics, Ain Shams University, Egypt.
- 1973: Completed the Course Requirements for a M.Sc. degree in

HIGHLIGHTS OF MY QUALIFICATIONS



1. BUILDING GLOBAL R&D ORGANIZATIONS:

- 2007 - Established the Corning West Technology Center, Corning (Palo Alto & Sunnyvale).
- 2005 - Established the US R&D Center, Avago (Now Broadcom) Technologies (San Jose).
- 2002 - Established the Communications & Optics Research Lab, Agilent Technologies (Palo Alto).
- 1999 - Established the Photonics & Electronics Lab, Hewlett-Packard (Palo Alto, Colorado Springs).
- 1999 - Established the Japan Tech Center, Hewlett-Packard (Tokyo).
- 1999 - Established the Peking Tech Center, Agilent Technologies (Peking).
- 1998 - Founded the Stanford Photonics Research Center (Stanford).

2. INVENTING & INNOVATING IN R&D (Examples from my teams):

- 2012 - Developed 10 and 20Gb/s Active Optical Cable (USB3.0 & Thunderbolt).
- 2003 - Invented and developed the Laser Mouse; the world's best trademark of pointing devices.
- 2000 - Set up the world's first Vertical Cavity Surface Emitting Laser (VCSEL) manufacturing entity.
- 1999 - Developed the world's first Optical Mouse engine.
- 1999 - Invented & developed the world's first parallel optical interconnects (12 Gb/s & 40 Gb/s).

Solid-State Physics, the American University in Cairo (AUC), Egypt.

- 1971: B.Sc. Electrical Engineering, Cairo University, Egypt.
- 1967: Completed the First Year at the Military Technical College (MTC), Cairo, Egypt.

WORK EXPERIENCE

- Jul 2018 - Present: Adjunct Professor, EE Department, Stanford University, Stanford, CA
- Jul 2007 - Sep 2023: Division VP & Chief Technologist, Corning R&D Corporation, Sunnyvale, CA.
- Dec 2005 - Jul 2007: VP and Chief Technology Officer, Avago (now Broadcom) San Jose, CA.
- Dec 1999 - Dec 2005: VP and Lab Director - Photonics Research Lab, Agilent Labs, Palo Alto, CA.
- Dec 1978 - Dec 1999: Lab Director, Photonics Research Lab, HP Labs, Palo Alto, CA.

BOARD MEMBERSHIPS

- Member, Technical Advisory Boards at UCSD, UCSB, Santa Clara University, and McMaster University.
- Member, Visiting Committee on Advanced Technologies (VCAT) for two terms, NIST.
- Founding Member, Advisory Board, Stanford Photonics Research Center (SPRC).
- Chairman of the Board, Optoelectronics Industry Development Association (OIDA).
- Member, National Academies Committee on Harnessing the Light for 21st Century, National Academies.
- General Chair of the Integrated Optoelectronics Symposium, Photonics West.

PUBLICATIONS & IP

- Featured in Bloomberg Businessweek, McKinsey Quarterly and optics.org.
- 150+ invited and contributed papers.
- 7 US patents.
- 6 book chapters in:
 - Optical Communication Networks.
 - Communications Network Test & Measurement Handbook.

- 1986-2002 - Invented & developed photonic/electronic technologies for more than 20 optical test and measurement products.
- 1984 - Developed Surface Acoustic Wave (SAW) low-loss filters for microwave spectrum analyzers.

3. MOVING RESEARCH RESULTS TO DEVELOPMENT & MANUFACTURING:

- Leadership to design and develop more than 20 optical test instruments in the 1980s to test the early fiber optic components and networks. Four business units were created to commercialize our technologies with multi billion dollars of revenues:
 - <http://hparchive.com/Journals/HPJ-1991-02.pdf>
 - <http://hparchive.com/Journals/HPJ-1993-02.pdf>
 - <http://hparchive.com/Journals/HPJ-1995-02.pdf>
 - <http://hparchive.com/Journals/HPJ-1997-12.pdf>
- Leadership to develop the world's first commercial vertical cavity surface emitting lasers (VCSELs) with the most valuable patents in the VCSEL area:
 - <https://patents.justia.com/patent/5359447>
 - <https://ieeexplore.ieee.org/document/612455>
- Leadership in inventing, developing, and manufacturing the industry's first laser mouse with multibillion units sold:
 - https://www.agilent.com/labs/features/2005_ieeefellows.html
 - <http://archive.computerhistory.org/resources/access/text/2017/10/102738447-05-01-acc.pdf>
 - <https://www.investor.agilent.com/news-and-events/news/news-details/2005/Agilent-Technologies-Ships-400-Millionth-Optical-Mouse-Sensor/default.aspx>
- Leadership to coin and promote the "Tera Era" term and build the world's first parallel optical interconnects modules at 30 and 120 Gb/s:
 - <https://www.spiedigitallibrary.org/conference-proceedings-of-spie/4533/1/High-speed-VCSEL-based-optical-interconnects/10.1117/12.447769.short>

4. PROMOTING PHOTONICS AS ESSENTIAL TECHNOLOGY FOR THE USA:

- A member of the US National Academies' Committee on Harnessing the Light for 21st Century. Released a landmark report (Optics & Photonics: Essential Technologies for Our Nation) discussing the current state of optical sciences and goals for the future:
 - <https://www.nap.edu/read/13491/chapter/1#ii>
- The Harnessing Light committee members also made several specific recommendations on how to best capitalize on the opportunities optics and photonics provides, resulting in establishing the Photonics Manufacturing Institute (now AIM Photonics) in 2014:
 - <https://spie.org/news/1003-imi-white-house-ancmt?SSO=1>