

# JOHN WING

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**SUMMARY:** Chem. Engineer (BChE & M.Engr.) HEMI, Di, & Hemi-Di Phosphoric Acid; DAP; Gypsum CONSULTING, process design, project management, operations, studies, economic evaluations. PRESENTATIONS & technical papers for dozens of international phosphate conferences. Implemented 5 phos acid projects (new & conversions) using the advanced HEMI process.

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**EDUCATION:** Bachelor of Chemical Engineering (Honors), Univ. Florida  
Master of Engineering, Administration, Univ. South Florida

**ORGANIZATIONS:** AIChE Fellow: (American Inst. Chemical Engineers), Section Chair, Vice-Chair, & Sec'y  
AIChE Engineer of the Year 2012 MENSA

**LICENSED PROFESSIONAL ENGINEER:** Florida #22832

## **TECHNICAL PRESENTATIONS:**

**HEMI Phosphoric Acid Process:** Symphos 2017, Phosphates 2016, AIChE (10 presentations)  
**Phos Acid Evap'n, Gypsum, Phos Acid Water Systems:** AIChE Clearwater Conf. (5 presentations)  
**DAP Innovations:** Phosphates 2015 (Tampa) & Arab Fertilizer Association, 2011  
**Using Gypsum, Uranium, Rare Earths, & FSA:** Phosphates 2013, AIChE Clearwater 2012 & 2016  
**Working with Regulatory Bureaucracies** (who seem to work in a 5<sup>th</sup> dimension), SME Conf., AIChE  
**Altruism in Engineering:** AIChE National & AIChE Clearwater Conf.  
Featured in 6 articles in *Fertilizer International* journal

## EXPERIENCE

**HEMI PHOS ACID CONSULTING CO. / JOHN WING, PE, LLC:** Lakeland FL, USA  
**Phosphate Consultant** [2007 to Present]

**Several Clients on 4 Continents** (some not named due to confidential nature) 2007 to present  
Technical consulting regarding:

New or Expanded Phosphoric Acid (Hemi & Di) & DAP Plants - 7 clients,  
Consulting to improve several existing Phosphoric Acid Plants  
DAP, Gypsum Utilization, Fluosilicic Acid Recovery, Rock Grinding, SSP, etc.

**SPIC/Greenstar**, Tuticorin, India 2018 to present  
Consulting that solved serious performance problems in new Hemi-Di Phos Acid plant.  
Outlined plans to increase from 500 to eventual 750 t/d capacity.

**Ma'aden Phosphate Co.**, Ras Al Khair, Saudi Arabia 2012 to present  
Frequent Consulting for 3 large Hemi phos acid plants. Studies. Basic engineering.

**Indo-Jordan Chemical Co.**, Eshidiya, Jordan 2007 to present  
Detailed plans for staged expansion of a hemi Phosphoric Acid plant from 700 to 1,000+ t/d.

**Paradeep Phosphates, Ltd.**, Paradeep, India 2010 to 2014  
Phos Acid Evaporation, FSA recovery, PA fume collection & scrubbing

**Aleff Group**, London 2016 to present  
Consulting for phos acid, fertilizers, & utilizing phosphogypsum. Plants in Asia & Mid-East.

**HITECH SOLUTIONS, INC.:** Lakeland, Florida, USA [1986 to 2007]

**Senior Vice President:** Responsible for all process design, including:

- Basic Engineering for 3 large **Hemi Phosphoric Acid** plants for Ma'aden, Saudi Arabia
- Conversion of Arcadian Phos Acid plant to **Hemi** process. **Easy start-up; record 96% P2O5 recovery.**
- Expansion & modernization of several **DAP & MAP plants**, involving Vaporizer-Scrubbers, Dual-Mole Reactor/Granulator Scrubbing, pre-neutralizers, granulators, dryers, & screening.

- Basic Engineering to convert a 2650 t/d Phosphoric Acid plant to advanced **Hemi-Di** process
- Consulted as owner's engineer for new **Hemi phosphoric acid** plant - Indo-Jordan Chemicals Co.
- New **granular phosphate** plant with advanced recycle control for Pequiven in Venezuela
- Numerous projects for **Fume Scrubbers, Fluosilicic Acid recovery, Gypsum Handling (wet & dry), Water Treatment**, and processing of various liquid and solid materials
- Promoted Hydro/Yara **Hemi process** with many presentations, feasibility studies, & process designs.

**BEARDEN-POTTER CORP.:** Lakeland, Florida

**Senior Process Engineer:** Process design:

- Conversion of Prayon Dihydrate plant to **Hemi process** at Belledune, Canada. Quick start; easy operation.
- New Phos Acid **Belt Filter, Evaporator, & Flash Cooler Pump** – Esso, Canada
- New Phos Acid **Reactors** – Florida & Israel
- Detailed **Study** to develop Uganda's Sukulu Hills **phosphate deposit**.  
Basic engineering for Beneficiation, Rock Grinding, & SSP/PAPR fertilizer plant.
- Modification of GSFC phos acid plant to achieve 60% more capacity with existing reactor & filters –  
Awarded India "**Phosphate Plant of the Year**"
- 3 new **Phosphoric Acid Evaporators** of our own design. 2 modified phosphoric acid evaporators
- Installation of new **Phosphoric Acid Evaporators** at 4 plants
- Expansion & **modernization** of several **DAP** fertilizer plants
- Fluosilicic Acid (**FSA**) recovery system on several phos acid evaporators
- Large 2-train **NPK** fertilizer plant; project manager for detail design of **fume scrubbing system**
- Sulfuric acid evaporation facility for a parchment plant
- Steam savings studies and implementation at two phosphate chemical plants

**CONSERV CHEMICALS:** Nichols, Florida

**Senior Process Engineer** for reactivation & modernization of a phosphate fertilizer complex.

**USS AGRI-CHEMICALS:** Bartow, Florida

**Manager of Process Development Station** with a staff of 17 engineers & technicians

**Environmental Engineer** Environmental Protection for phosphate chemicals & phosphate mine

**CONTINENTAL OIL CO. & AGRICO DIVISION:** South Pierce, Fla. & Ponca City, OK

**Asst. Phosphoric Acid Superintendent**, South Pierce, Fla.

Set capacity records. **Reduced P<sub>2</sub>O<sub>5</sub> losses by 40%.**

Converted **Gypsum** storage method from a settling pond into an enclosed stack.

**Process Engineering Coordinator:** Responsible for all process improvements at phosphate plant

**Sr. Process Engineer** in Oklahoma: Supervised engineers for process design of petrochemical plants.

**AMERICAN CYANAMID:** Brewster, Florida

**Chemical Development Engineer:**

Developed improvements **in phos acid & DAP** plants.

Designed, erected, & operated 4 **pilot plants** for new processes & innovations.

**HERCULES, INC.:** Brunswick, Georgia

**Process Engineer** at plant extracting rosin, resins, and oils from pine stumps.

Trouble-shooting, process improvement, & development. Automated rosin leaching process.