

# Lihong Shen

1203-30 Godstone Rd, North York, ON, M2J3C6

Tel: 1-416-627-5899

[shenlihong@yahoo.com](mailto:shenlihong@yahoo.com)

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## OBJECTIVE

To obtain a position as a wastewater design engineer

## PROFILES

- Strong background in engineering design and research of wastewater treatment processes
- Experience in preliminary and detailed design, PFD and P&ID development, preparation of specifications and proposal, plotting design into drawings and site inspection
- Excellent skills in data analysis, engineering calculations and technical report writing
- Master's degree (PhD Candidate) in Civil/Environmental Engineering, University of Toronto
- Proficiency in MS Office, AutoCAD, Windows, SQL and MS Visual Basic
- Highly motivated team player and hard worker

## SKILLS AND EXPERIENCE

### Process Design, Evaluation and Optimization (wastewater relevant)

- Port Weller WPCP Upgrade (capacity increased from 5,376 m<sup>3</sup>/d to 11,300 m<sup>3</sup>/d):
  - a) Completed the detailed design of dechlorination systems including the system layout, P&ID, and chemical storage room plan/sections
  - b) Conducted the detailed design of a centralized odour control system with an in-ground open bed biofilter (20,000 m<sup>3</sup>/hr capacity) including optimization of the biofilter gas distribution system, design of odour collection system, and selection of multi-layer filter media
- Performance Evaluation of rotating biological contactors (RBCs) from the Niagara Falls and Guelph WWTPs:
  - a) Illustrated that the Niagara Falls WWTP could better control the solids concentration in the effluent by controlling the hydraulic loading in RBC contactors
  - b) Suggested that the Guelph WWTP could shorten SRT slightly in the secondary treatment
- Hydrogen recovery and membrane fouling control from an innovative lab-scale fermentative hydrogen-producing membrane bioreactor (HPMBR) system:
  - a) Achieved a high hydrogen yield at an optimum organic loading rate (OLR) within the examined OLR range of 4.0 to 30 g COD/L/d
  - b) Effectively controlled colloidal concentration by biosolids granulation
- Life-cycle assessment of two biological wastewater treatment processes: an activated sludge process and a rotating biological contactor process

### Technical Report Writing and Preparation of Specifications

- Prepared the specifications of dechlorination system for Port Weller WPCP Upgrade
- Completed the operational manual of the upgraded headworks and biosolids management for Lakeview WWTP
- Reviewed phosphorus removal processes and prepared the treatment process update report
- Prepared a white paper relevant to agricultural land applications of biosolids from the anaerobic digestion of WWTP sludge

**Client Interface Skill**

Plumbing system design for buildings for over 20 projects, including institutional, commercial, residential and multi-functional buildings:

- Liaised the clients prior to and during the design of the projects
- Coordinated with contractors, regulatory agencies and other consultants
- Inspected construction field

**Oral Presentation Skill**

- Presented in Proceeding of the 2009 Water Environment Association of Ontario Conference and technical seminars at University of Toronto
- Conducted laboratory sessions to supplement the course of “Fluid Mechanisms”
- Conducted tutorial classes for the course of “Municipal Engineering”

**WORK HISTORY**

Research Assistant, University of Toronto, Toronto, Canada	9/2002-Present
Intern, AECOM (formerly KMK Consulting Ltd, Canada)	May-Aug 2006&2007
Civil Engineer, Xiamen Global Architects & Engineers Associates, China	1995-2001

**EDUCATION**

**Candidate Doctor of Philosophy** – Civil / Environmental Engineering, University of Toronto, Toronto, 2005 – 2010

**Master of Applied Science** – Civil/Environmental Engineering, University of Toronto, Canada

**Bachelor of Engineering** – Environmental Engineering, Tongji University, Shanghai, China

**AFFILIATIONS**

- Member of the Water Environment Federation since 2004
- Student Member of the University of Toronto Water Environment Association of Ontario Student Chapter

*References available upon request*