

JANGSOO LEE, PH.D.

To be a Defending midfielder in battery research

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Daejeon, South Korea

COVER LETTER

- I have studied a field of battery for around 10 years since my Ph.D course and especially, I was able to accumulate practical knowledge of battery materials such as Sulfur and high Ni layered oxide cathode materials and related working mechanism at LG Chem.

- Briefly, during my Ph.D at UNIST, Korea, I studied a zinc-air battery for 4 years which has been considered as next-generation battery for its 3~5 times higher energy compared to conventional Li-ion battery. I conducted a research field of oxygen related electrochemistry and published 18 peer-reviewed journal papers including high impact journal such as *Angew. Chem., Int. Ed., Nano Letters, ACS Nano, Energy and Environmental Science, and Advanced Energy Materials* and made a significant contribution to academic, industry and society and a **total citation of 4464 times with 17 of H-index as of 1 Aug. 2020 (According to Google Scholar)** can clearly support my endeavor as well as contribution. Then, I continued my battery research career as a full time Postdoctoral Research Associate position at Stanford, U.S.A and studied new zinc ion intercalating cathode materials as well as highly reversible zinc electrode for around 2 years. After joining LG chem., Korea, I conducted a Li-Sulfur battery project for around 3 years with a goal of commercialization for its much higher energy density and low cost and then have studied a project of a development of high Ni cathode materials for an advanced Li-ion battery with high energy density to date. Specially, these high Ni cathodes related research is considered as very significant project in any country, thus I am totally sure that my valuable hand in experience in this state of art study will significantly create several related jobs and new industry.

- Aforementioned batteries, Zinc-air, Li-Sulfur, and Li-ion, has totally different working mechanism and materials, thus having each strong and weak points when considering its application to variety purpose such as electric vehicles, grid scale energy storage, and so on. In other words, the development of materials for energy application requires a deep understanding about material chemistry as well as in depth knowledge of the system requirements. Therefore, I have vast experience in conducting a battery research with different chemistry and thus I am well-experienced in practical knowledge at LG chem. Based on well balanced experience in both academic and industry research area to date, I am confident that I will success in continuing in my endeavor and creating ideas.

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EXPERIENCE

Professional

LG Chem. Research Park

03/2016 - current Daejeon, South Korea

CA (Chlor-Alkali) & Alkaline Water electrolysis

• Development of large area electrode (1.2m X 2.4m) for OER, CER, and HER. Its application on 10MW CA process.

(12/2021 - Present)

Organic electrolyte & Li based battery

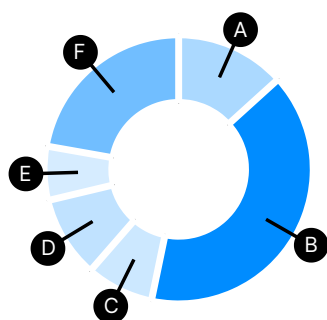
• Li-Mn rich materials: Cathode Material design, synthesis, evaluations (10/2021 - 11/2021) (2 month)

• NCMA (Ni >90%) cathode materials: Precursor & cathode Material design, synthesis including 250L pilot scale, evaluations

(03/2019 - 09/2021) (2 years 7 month)

• Development of high performance sulfur cathode for Li-S battery (03/2016 - 02/2019) (3 years)

A DAY OF MY LIFE



- A Spending time with Hayeon, Anna, and Junghee
- B Working at LG chem.
- C Exercise
- D Meditation & creating idea
- E Reading a book
- F Sleep & Relaxing

PUBLICATIONS

Google scholar

https://scholar.google.com/citations?user=txvX0nsAAAAJ&hl=en

LIFE PHILOSOPHY

Go Brave, No Fear, No Regrets

SKILLS & STRENGTH

Electrochemistry

Creating original idea

Power of execution Data analysis

Risk management

EDUCATION

Ph.D in Battery Science and Technology

Ulsan National Institute of Science and Technology (UNIST)

04/2010 - 03/2014 Ulsan, South Korea

• Supervisor: Professor Jaephil Cho

M.S in Physical Chemistry

Korea University

03/2006 - 02/2008 Seoul, South Korea

• Supervisor: Professor Minhaeng Cho

B.S in Chemsitry

Korea University

09/2003 - 02/2006 Seoul, South Korea