

## Dr. Deepak Pratap Singh

### Biography:

Deepak received his PhD in 2014 from the Reactor Institute Delft at the Delft University of Technology, where he worked on High Performance Batteries (Li-Ion, Li-Sulfur, Na-Ion) that includes probing lithium dynamics in high voltage battery materials, in-situ electrochemistry, tailoring electrode architecture for optimized ionic and electronic transport. In 2015, he made it to finals of Dutch CleanTech Challenge and later have received support from the Yes Delft and the Climate-KIC Accelerator programs for developing low cost energy storage systems. Currently, as a post-doctoral researcher at Inorganic Material Science group he is focus on synthesis and tuning of fast ionic conductors for all solid-state battery, interface engineering, in-situ studies using Neutron and X rays techniques.

### Publications ([Google Scholar](#))

1. 3-D Vertically Aligned Few Layer Graphene – Partially Reduced Graphene Oxide/Sulfur Electrodes for High Performance Lithium-Sulfur Batteries  
Deepak P. Singh, N. Soin, S. Sharma, S. Basak, S. Sachdeva, S. S. Roy, HW. Zanderbergen, J. A. McLaughlin, M. Huijben, M. Wagemaker  
(submitted 2016)
2. 3D Networks of Carbon-Coated Magnesium-Doped Olivine Nanofiber as Binder-Free Cathodes for High-Performance Li-Ion Battery  
D. Ma, P Zhang, Y Li, A. M. Abdelkader, Deepak P. Singh, X Ren  
**Advanced Materials Interfaces** (2016)
3. Relating the 3D electrode morphology to Li-ion battery performance; a case for LiFePO<sub>4</sub>  
Z Liu, TW Verhallen, Deepak P. Singh, H Wang, M Wagemaker, S Barnett  
**Journal of Power Sources** 324, 358-367 (2016)
4. Direct view on the phase evolution in individual LiFePO<sub>4</sub> nanoparticles during Li-ion battery cycling  
X. Zhang, M. v Hulzen, Deepak P Singh, A. Brownrigg, J. Wright, N. v Dijk, M. Wagemaker  
**Nature Communication** (2015) 14 (5), 2279-2285
5. Rate Induced Solubility and Suppression of the First-Order Phase Transition in Olivine LiFePO<sub>4</sub>  
X. Zhang, M. v Hulzen, Deepak P Singh, A. Brownrigg, J. Wright, N. v Dijk, M. Wagemaker  
**Nano Letters** (2014) 14 (5), 2279-2285
6. Facile Micro Templating LiFePO<sub>4</sub> Electrodes for High Performance Li-Ion Batteries.  
Deepak P. Singh, F.M. Mulder\*, A.M. Abdelkader, Marnix Wagemaker\*;  
**Advanced Energy Materials** (2013) 3 (5), 572-578
7. Nanostructured TiO<sub>2</sub> Anatase Micro Patterned 3D Electrode for High Performance Li-ion Batteries  
Deepak P. Singh, A George, RV Kumar, JE ten Elshof, Marnix Wagemaker.  
**J. Physical Chemistry C** (2013) 117 (39), 19809-19815
8. Templated Spinel Li<sub>4</sub>Ti<sub>5</sub>O<sub>12</sub> Li-ion Battery electrodes combining High Rates with High Energy density.  
Deepak P. Singh, F.M. Mulder, Marnix Wagemaker.  
**Electrochemistry Communications** (2013) 35, 124-127
9. Combustion synthesis of PbO from lead carboxylate precursors: A new method for recycling spent lead- acid battery components  
Jiakuan Yang, R Vasant Kumar, Deepak P. Singh  
**J. Chemical Tech and Biotech.** (2012) 87 (10), 1480-1488
10. Dynamic Solubility Limits in Nanosized Olivine LiFePO<sub>4</sub>.  
M. Wagemaker, Deepak P. Singh, W. Borghols, U. Lafont, L. Haverkate, V. Peterson, F.M. Mulder;  
**J. American Chemical Society** (2011) 133 (26), 10222-10228
11. Direct synthesis of nanocrystalline Li<sub>0.90</sub>FePO<sub>4</sub> observation of phase segregation of anti-site defects on delithiation.  
S. Badi, M. Wagemaker, BL Ellis, Deepak P. Singh, W. Borghols, W. Kan, D. H. Ryan, F. Mulder, L. Nazar  
**J. Materials Chemistry**, (2011) 21 (27), 10085-10093