



Transformation  
Towards the Ultimate

**WORLD CLASS PROFESSOR**  
**UNIVERSITAS SUMATERA UTARA**

**Kampus  
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INDONESIA JAYA



Jalan Bioteknologi No. 1 Kampus USU Padang Bulan, Medan-20155

# CERTIFICATE

No. 3712/UN5.2.1.8/SSA/2021

Presented to

**Prof. Dr. Aman Sentosa Panggabean, M.Si.**

Has well participated as

**PARTICIPANT**

For Attending **GUEST LECTURER: Battery, Semiconductor and  
Energy Storages; Trend and Challenging**  
Monday, October 18, 2021

Rector of Universitas Sumatera Utara



**Dr. Muryanto Amin, S.Sos., M.Si.**

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Keynote Speaker	Topic	Duration
Assoc. Prof. Dr. Suriati Paiman	Progress Research In Semiconductor Field	2 Hours
Prof. Ts. Dr. Engr. Mohamad Rusop	Developing Energy Storage (Solar Cell)	2 Hours
ChM. Ts. Dr Muhd Firdaus Kasim	Nickel-Rich Cathode Materials For Lithium-Ion Batteries	2 Hours
Dr. Maykel Manawan, S.Si., M.Si	Analyzed Battery with XRD and SEM-EDX	2 Hours
Rani Deliani Panggabean, MSc	Analyzed Battery with XRD and SEM-EDX	2 Hours
Rikson Siburian, Ph.D	The Role of Graphene for Battery	2 Hours
AMOUNT		12 Hours