

## PERSONAL INFORMATION



## Nicolò Albanelli

via L.Ariosto 6/2, 40065 PIANORO (BO)

3923717041

nicolo.albanelli@gmail.com

Gender Male | Date of birth 22/10/1997 | Nationality Italy

## WORK EXPERIENCE

Jan 2022 - to date

### Research contract for the European Project EIT Raw Materials CO2CARBON

LEME Laboratory – Department of Chemistry “G. Ciamician” - Alma Mater Studiorum – Università di Bologna (BO).

**Supervisor:** Prof.ssa Catia Arbizzani

**Activities:** physico-chemical characterization of carbonaceous materials obtained by the reduction of CO<sub>2</sub> through the MSCC-ET process. Optimization of the formulations of electrodes prepared with such carbonaceous materials exploiting a Design of Experiment (DOE) approach and electrochemical characterization in coin cells and T-shaped cells, in half and full-cell configurations.

Nov 2021 – Dec 2021

### Internship

LEME Laboratory – Department of Chemistry “G. Ciamician” - Alma Mater Studiorum – Università di Bologna (BO).

**Topic:** study of carbonaceous materials for Li ion batteries.

**Activities:** formulation and preparation of different slurries and electrochemical characterization. Study of the rheological properties of slurries.

Mar 2021 - Jul 2021

### Curricular internship

Department of Chemistry “G. Ciamician” - Alma Mater Studiorum - Università di Bologna (BO), Italy.

**Topic:** Characterization of electrolytic solutions used in copper-based redox flow batteries.

**Activities:** characterization of electrolytes carried out using various spectrophotometric and electrochemical techniques, including UV/Vis and NIR spectrophotometry, cyclic voltammetry (CV), chronoamperometry, voltabsorptometry.

Sep 2019 - Dec 2019

### Undergraduate Internship

Department of Chemistry “G. Ciamician” - Alma Mater Studiorum - Università di Bologna (BO), Italy.

**Topic:** characterization of titanium-based electrode materials used as anodes for sodium-ion batteries.

**Activities:** synthesis of electroactive material NaTi<sub>2</sub>(PO<sub>4</sub>)<sub>3</sub> and preparation of electrodes by roll coating. Use of specific instrumentation and techniques for the characterization of electrode materials, including SEM, EDX, TEM, TGA, XRD, FT-IR, cyclic voltammetry (CV) and galvanostatic techniques.

## EDUCATION

2019 - 2021

## Chemistry (LM-54)

2nd level-cycle degree/Master of Science (2 years)

Department of Chemistry "G. Ciamician" - Alma Mater Studiorum - Università di Bologna.

**Thesis topic:** "Spectroelectrochemical characterization of copper chloride complexes formed in electrolytical solutions used in redox flow batteries"**Supervisor:** Prof.ssa Catia Arbizzani**Co-supervisor:** Giampaolo Lacarbonara**Final mark:** 110/110 cum laude

2016 – 2019

## Chemistry and Materials Chemistry (L-27)

1st level-cycle degree/Bachelor (3 years)

Department of Chemistry "G.Ciamician" - Alma Mater Studiorum – Università di Bologna.

**Thesis topic:** "Titanium based anodes for sodium ion batteries"**Supervisor:** Prof.ssa Catia Arbizzani**Co-supervisor:** Christina Verena Toigo**Final Mark:** 109/110

## PERSONAL SKILLS

Mother tongue(s)

Italian

Foreign language(s)

English

UNDERSTANDING				SPEAKING				WRITING	
Listening		Reading		Spoken interaction		Spoken production			
B2	Independent	C1	Proficient	B2	Independent	B2	Independent	B2	Independent

Professional skills

**Physico-chemical characterization of materials:** UV/Vis and near-infrared (NIR) spectroscopy, Scanning electron microscopy (SEM), Energy dispersive X-ray analysis (EDX), Transmission electron microscopy (TEM), X-ray diffraction (XRD), Thermogravimetric analysis (TGA), Fourier-transform infrared spectroscopy (FT-IR), rheological measurements.**Electrochemistry:** Cyclic voltammetry (CV), Galvanostatic cycling with potential limitations (GCPL), potentiostatic techniques, Electrochemical Impedance Spectroscopy (EIS), 4-point probe.

Digital skills

Microsoft Office suite, Origin software, EC-Lab, X'Pert HighScore, ChemDraw, ImageJ, graphic design programs (basic), audio editing software.

Driving license

B

## PUBLICATIONS

2022

**Paper to be published**

G. Lacarbonara, N. Albanelli, R. Petruzzelli, D. Fazzi and C. Arbizzani, "A spectroelectrochemical study of copper chloro-complexes for high performance copper redox flow batteries".

- 2022 Paper**  
L. Bargnesi, F. Gigli, N. Albanelli, C. Toigo and C. Arbizzani,  
“Crosslinked chitosan binder for sustainable aqueous batteries”, special Issue on  
*Nanomaterials* "Advances in Nanomaterials for Lithium-Ion/Post-Lithium-Ion  
Batteries and Supercapacitors".
- 2019 Report ENEA – Ricerca di Sistema Elettrico**  
C. Arbizzani, M. Rahmanipour, J. Aricò, N. Albanelli, M. Di Carli, “Caratterizzazione  
chimico fisica ed elettrochimica di elettroliti non acquosi per celle sodio ione e di  
controelettrodi carboniosi”.

## PRESENTATIONS

---

- Sep 2022 Giornate dell'Elettrochimica Italiana – GEI2022**  
Oral presentation titled “*A Mixture Design approach for the optimization of electrode  
formulation: case study of graphitic carbon obtained by CO<sub>2</sub> reduction used as active  
material*”.
- Jun 2022 First Symposium of Young Chemists Innovation and Sustainability – SYNC2022**  
Oral presentation titled “*Mixture Design: a multivariate modeling approach for  
electrode formulation optimization*”.

## AWARDS

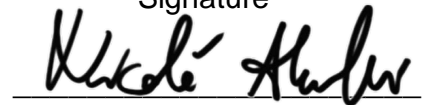
---

- 2022 Award from the Italian Society of Chemistry (SCI) – Division of Electrochemistry**  
For the oral presentation titled “*Mixture Design: a multivariate modeling approach for  
electrode formulation optimization*” presented at the First Symposium of Young  
Chemists Innovation and Sustainability (SYNC2022).
- 2021 Borsa di studio BCC Felsinea “in memoria di Stefano Berti”**  
Per l'eccellente risultato conseguito nell'ambito del percorso di studi.

In compliance with the GDPR and Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize the recipient of this document to use and process my personal details for the purpose of recruiting and selecting staff and I confirm to be informed of my rights in accordance to art. 7 of the above mentioned Decree.

Bologna, 19/11/2021

Signature

A handwritten signature in black ink, appearing to read "Michele Hurler", is written over a horizontal line.