

Human vs AI hiring challenge

Job ads and candidate applications

Two fictional hiring rounds: Battery Systems Engineer and Lab Technician in electrolyzer development. Review the job ad and applications, then choose your candidates before watching the reveal.

All candidates, employers, projects, application statements, and interview answers are fictional. Candidates are identified only by invented initials and/or candidate IDs. Cover letter presence is preserved as submitted.

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ROUND 1 • BATTERY SYSTEMS ENGINEER

Battery Systems Engineer - Grid storage product development

A fictional Munich based company, Northstar Storage, is developing a modular lithium ion battery energy storage system for commercial and utility projects. The first product uses purchased LFP cells and modules and integrates the battery, battery management system, thermal management, protection, controls, enclosure, and service strategy. A pilot is due in nine months; later versions may use different cell suppliers. The engineer will work with mechanical, electrical, controls, safety, sourcing, and field teams.

What the person will own: Convert product requirements into a system architecture and interface specifications; trade off performance, lifetime, cost, safety, and serviceability; define verification plans and investigate failures; work with vendors and test labs; turn field findings into design changes. The engineer must explain decisions and uncertainty clearly, and know when to bring in a specialist.

Requirements: Roughly four or more years of relevant engineering experience or equivalent demonstrated ownership; evidence of battery systems integration, validation, or product development; practical understanding of electrical and thermal behavior and safety; ability to lead a cross functional technical decision. We accept adjacent backgrounds and nontraditional paths. Munich hybrid working or regular travel is possible. No degree or cover letter requirement.

The first six months: Assess the pilot architecture, close the most important design risks, write the system verification plan, qualify one cell or module integration path, and lead a root cause investigation on at least one pilot issue.

C01 • MK

CV | Munich | 8 years | Senior battery systems engineer

- 2022-present, product lead for containerized LFP systems at a mid sized integrator. Owned requirements and interfaces from module to rack to container; coordinated electrical, mechanical, controls, and certification teams on a 2 MWh platform. Released two design revisions after pilot failures.
- 2018-2022, battery validation engineer in automotive. Built abuse, vibration, and environmental test plans with external labs; led a connector overheating investigation.
- MSc Electrical Engineering. Familiar with FMEA, requirements traceability, IEC 62619 and UL 9540A test interpretation; does not claim to be a certification authority.
- Selected evidence: reduced recurring pilot shutdowns from approximately weekly to less than monthly after harness routing, sensing, and firmware changes. Figures are internal estimates; the contribution of each change was not separately isolated.
- Motivation: wants broader architecture ownership. Availability: three months. Munich hybrid.

Cover letter: “The challenge that interests me is turning a supplier module into a dependable system. I have had to tell teams when a pilot result was insufficient to claim a design was ready. I would start by mapping failure modes, interfaces, and tests against your nine month pilot date.”

C02 • RC

CV | Remote from Portugal, monthly travel | 11 years | Cell and electrochemistry specialist

- 2019-present, principal cell development scientist at a battery manufacturer. Led LFP aging studies, cell supplier benchmarking, and degradation models; coauthored six publications and two patents.
- 2015-2019, electrochemist at an electric vehicle company, advising on fast charge limits and cell diagnostics. PhD in Electrochemistry.
- Evidence: identified a plating risk in a separate high energy cell program and changed test temperatures; cell cycle life improved in a follow up sample set. No container scale integration ownership stated.
- Motivation: move from cell work toward system products. Availability: one month. Can travel four days per month; otherwise remote.

No cover letter submitted.

C03 • AR

CV | Berlin, willing to commute weekly | 6 years | BMS and embedded controls engineer

- 2021-present, BMS technical lead for industrial battery packs. Owned state estimation, fault detection, CAN interfaces, and controls requirements for two production pack variants. Led a team of four.
- 2020-2021, firmware engineer for power converters. MSc Mechatronics.
- Evidence: corrected an intermittent contactor opening issue traced to timing across controller and HVIL signals. Implemented logging and a bench reproduction test before releasing a firmware fix.
- Has reviewed thermal and electrical design interfaces but has not owned enclosure design, fire propagation tests, or grid site commissioning.
- Motivation: end to end technical ownership. Availability: two months.

Cover letter: “I know the BMS is only one part of the product. My first priority would be to make fault behavior and observability explicit, then sit with mechanical and electrical colleagues to find the cases our current tests miss.”

C04 • JW

CV | Munich | 14 years | Senior power systems project engineer

- 2017-present, delivered three grid storage projects totaling 90 MWh for an EPC contractor. Managed grid interfaces, protection coordination, commissioning, suppliers, and customer acceptance. Previously worked in industrial power distribution.
- Diplom Ingenieur in Electrical Engineering. Strong site and supplier experience; no evidence of cell or pack design ownership.
- Evidence: prevented a transformer energization issue by requiring a revised protection study and witnessed commissioning tests. Project completion was on time; the CV does not separate his contribution from the team's.
- Motivation: move upstream into product development. Availability: immediately. Munich based.

No cover letter submitted.

C05 • LH

CV | Munich | 5 years | Reliability and safety engineer

- 2022-present, reliability engineer at a stationary storage startup. Built field incident intake, fault trees, test to failure plans, and supplier corrective action process. Participated in two thermal event investigations with an external lab.
- 2020-2022, product safety engineer for industrial electronics. MSc Mechanical Engineering.
- Evidence: discovered that condensation and an assembly tolerance jointly caused intermittent sensor faults. Reproduced the mechanism in a chamber and verified the corrective action over accelerated test cycles.
- Limited architecture leadership and no stated ownership of high voltage electrical design.
Motivation: wants to own design decisions earlier. Availability: one month.

Cover letter: “I am most useful when a test result contradicts our preferred story. For your pilot, I would build a risk register that connects each claim to evidence and put a clear owner against every open failure mode.”

C06 • OG

CV | Munich | 12 years | Director of engineering

- 2020-present, engineering director at a growing mobility battery company. Managed 25 people and an annual development budget. Reports a 30% cost reduction and two platform launches; the CV does not explain baseline, technical ownership, or verification evidence.
- 2014-2020, product manager and mechanical engineering manager for consumer energy devices. MBA and BEng Mechanical Engineering.
- Skills listed: battery strategy, product roadmaps, vendors, AI, design thinking, agile, leadership, and safety.
- Motivation: “build the next category leader.” Availability: immediate. Munich based. Expected compensation is above the posted senior engineer range.

Cover letter: “My record of launching platforms and scaling teams makes me a perfect fit. I can transform your product roadmap and accelerate delivery from day one.”

C07 • SM

CV | Augsburg, regular Munich travel | 7 years | Thermal and mechanical engineer

- 2021-present, thermal architecture engineer for liquid cooled commercial vehicle packs. Owned cooling concept, CFD correlation, thermal test fixtures, and supplier drawings; supported electrical safety and service access reviews.
- 2019-2021, mechanical design engineer for inverter enclosures. MSc Mechanical Engineering.
- Evidence: rejected a nominally lower cost cold plate after tests exposed uneven cell temperatures under partial flow blockage; documented tradeoffs and a validation plan for the revised design.
- No direct utility storage deployment or BMS ownership. Motivation: move to stationary systems, where service life and field access matter more. Availability: two months.

No cover letter submitted.

C08 • DO

CV | Munich | 4 years | Manufacturing and test engineer

- 2023-present, end of line test engineer for battery racks at a contract manufacturer. Designed functional test fixtures, defect tracking, rework rules, and test data dashboards. Earlier built low voltage industrial controls.
- BSc Electrical Engineering; completed part time battery safety and high voltage training.
- Evidence: traced intermittent rack failures to torque process variation and connector geometry; introduced a fixture and sampling audit. First pass yield rose from 89% to 96% over four months, though product mix also changed.
- Has not owned top level architecture. Motivation: move from detecting faults to preventing them in design. Availability: six weeks.

Cover letter: “I cannot claim to have designed a whole BESS. I have seen where designs become ambiguous on a production line. I would bring test data and assembly feedback into early interface reviews, and I would need support on architecture decisions at first.”

C09 • PN

CV | Munich | 9 years | Systems architect in fuel cells and electrolyzers

- 2021-present, lead systems engineer for an industrial electrolyzer platform. Owned requirements, hazards analysis, supplier interfaces, verification matrix, and pilot issue triage across controls, fluid, electrical, and mechanical teams.
- 2017-2021, fuel cell test and integration engineer. MSc Systems Engineering. Built a repeatable failure review and change control process across three pilot sites.
- Battery specific experience: a six month integration project for a 100 kWh backup system; no deep lithium ion cell degradation or BMS design experience.
- Evidence: identified conflicting pressure and shutdown assumptions between two vendors before factory acceptance testing, then led a test that exposed the issue.
- Motivation: transfer systems methods to batteries. Availability: three months.

Cover letter: "I would not pretend hydrogen safety maps directly onto battery safety. The transferable part is managing interfaces, evidence, and decisions when several disciplines each see only part of the system. I would pair quickly with your battery specialists on chemistry specific risks."

C10 • EF

CV | Munich | 6 years | Battery test lead and field engineer

- 2022-present, field reliability lead at a storage operator. Investigated alarms, HVAC failures, insulation events, and availability losses across 18 sites; managed test reproductions with the integrator.
- 2020-2022, lab engineer for LFP module cycling and power tests. MSc Energy Engineering.
- Evidence: used time synchronized site logs to connect nuisance shutdowns to a rare sequence of grid event, auxiliary power dip, and controller restart; coordinated a controls patch and field validation on three sites.
- Has not led the initial design of a commercial battery system. Motivation: bring field evidence into the next product generation. Availability: one month.

No cover letter submitted.

ROUND 2 • LAB TECHNICIAN

Electrolyzer development laboratory

Workplace: Munich, on site. Small development team working on proton exchange membrane (PEM) water electrolyzers. The membrane separates the hydrogen-producing and oxygen-producing sides of the cell. The lab tests individual cells and small stacks, meaning assemblies of multiple cells.

Purpose: Produce dependable test results and keep the laboratory ready for safe, repeatable development work.

Main duties:

- Assemble cells and small stacks using approved drawings, component revisions, and work instructions.
- Prepare test benches and perform prescribed readiness checks.
- Run approved test sequences, monitor results, and respond to deviations within the technician's authorization.
- Record component traceability, test conditions, maintenance, and incidents; preserve original data.
- Work with engineers and other technicians on troubleshooting, equipment care, stock control, and shift handovers.

Hiring priorities: Safety judgment, careful practical work, trustworthy records, useful troubleshooting, and constructive teamwork. The role needs someone who can execute routine work independently and recognize when a decision requires engineering or safety approval. Advanced electrochemistry research and independent test-bench design are not required.

Common conditions: All candidates accept the advertised salary, on-site work, and occasional planned late test coverage. All are available in six weeks. All have working German and English sufficient for the same lab duties. No candidate has a logistical advantage.

C01 • LAB TECHNICIAN

Professional summary: Laboratory technician with approximately three years of post-training experience, including two years in PEM electrolyzer development. Most recent work combines careful cell assembly with routine performance and endurance testing in a small development team.

Education: Vocational qualification as a chemical laboratory technician, completed in 2023. Training included solution preparation, analytical measurements, safe chemical handling, and laboratory documentation.

Experience:

- **September 2024-present | Development Lab Technician | Employer A, fictional - electrolyzer startup:** Prepares membrane, electrode, and gasket components; assembles single cells and small stacks using released instructions. Runs approved performance and endurance sequences, checks water-quality records, and documents component batches and assembly deviations. Supports scheduled equipment checks with the responsible engineer.
- **September 2023-August 2024 | Chemical Laboratory Technician | Employer B, fictional - industrial materials laboratory:** Prepared solutions and samples, performed routine conductivity and pH measurements, checked instrument readiness, and maintained traceable sample records.

Skills: Clean component handling, gasket inspection, controlled tightening sequences, prescribed leak checks, water-quality measurements, routine test-bench operation, Excel, and electronic laboratory notebooks. Trained in site hydrogen precautions and energy-isolation procedures; performs work within authorization.

Example contribution: Helped add a component-batch check to the assembly checklist after a traceability error. Regularly prepares assembly records for the next shift.

Scope of experience: Runs released tests independently after sign-off; unfamiliar bench faults and changes to test methods are handled with an engineer. Has limited experience modifying test-bench hardware.

Availability and conditions: Six weeks; Munich on site; advertised salary accepted; working German and English.

C02 • LAB TECHNICIAN

Professional summary: Mechatronics-trained test technician with approximately five years of post-training experience: three in fuel-cell testing and two in PEM electrolyzer development. Has worked particularly closely with test-bench hardware, maintenance, and practical fault investigation.

Education: Vocational qualification in mechatronics, completed in 2021. Subsequently completed employer training in hydrogen laboratory operation, component cleanliness, and test documentation.

Experience:

- **September 2024-present | Electrolyzer Test Technician | Employer C, fictional - hydrogen equipment developer:** Builds single cells and small stacks from released drawings, prepares benches, and operates approved performance and endurance tests. Supports investigation of pump, sensor, and connection problems and carries out authorized maintenance. Records configuration changes and component traceability.
- **September 2021-August 2024 | Fuel-Cell Test Technician | Employer D, fictional - automotive test laboratory:** Set up hydrogen fuel-cell durability tests, checked fluid connections and instrumentation, maintained bench equipment, and handed running tests over between shifts. Supported engineers investigating interrupted runs.

Skills: Reading mechanical and electrical drawings, tubing and fitting assembly, prescribed leak checks, controlled tightening procedures, routine sensor checks, test-recipe operation, Excel, and electronic laboratory notebooks. Trained in hydrogen precautions and energy isolation; hardware work follows approved procedures and authorization.

Example contribution: Helped introduce a released-recipe folder and a startup version check after an incorrect recipe was used. Supports the bench-readiness checklist and maintenance handovers.

Scope of experience: Comfortable with authorized hardware troubleshooting and routine cell builds. Less experience with analytical chemistry and water-quality investigations; uses the lab's prescribed checks and works with specialists when needed.

Availability and conditions: Six weeks; Munich on site; advertised salary accepted; working German and English.

C03 • LAB TECHNICIAN

Professional summary: Laboratory technician with approximately four years of post-training experience, including three in PEM electrolyzer testing. Recent work emphasizes repeatable single-cell measurements, instrument checks, and reliable test-data summaries, alongside routine assembly.

Education: Vocational qualification as a physics laboratory technician, completed in 2022. Training included electrical measurements, measurement uncertainty, instrument checks, and experimental records.

Experience:

- **September 2023-present | Electrochemical Test Lab Technician | Employer E, fictional - applied research laboratory:** Prepares and assembles PEM single cells, runs approved polarization and endurance tests, and records conditioning history, temperatures, pressures, and component batches. Supports measurement checks, compares repeat runs, and assists with small-stack builds when scheduled.
- **September 2022-August 2023 | Measurement Laboratory Technician | Employer F, fictional - instrumentation testing company:** Performed routine sensor-verification measurements, prepared measurement summaries, and maintained instrument and sample records under established procedures.

Skills: Routine cell assembly, prescribed leak checks, electrical and flow measurements, instrument-verification records, comparison of raw test traces, Excel calculations and charts, and electronic laboratory notebooks. Trained in site hydrogen precautions and energy-isolation procedures; works within authorization.

Example contribution: Helped add a known-value check to a flow-data spreadsheet following a conversion error. Maintains the test-record template and prepares repeatability summaries for engineers.

Scope of experience: Operates routine single-cell tests independently after sign-off. Has less small-stack assembly volume than single-cell experience and has supported, rather than led, major bench maintenance.

Availability and conditions: Six weeks; Munich on site; advertised salary accepted; working German and English.

ROUND 2 • INTERVIEWS

All three candidates answered the same five questions. Responses are grouped by question for comparison.

QUESTION 1

Interviewer: A hydrogen detector triggers an alarm during an endurance test. The lead engineer says the sensor has been unreliable and asks you to keep the test running for another twenty minutes because a customer report is due. What do you do?

C01: “I follow the site's alarm response immediately, including the required shutdown or evacuation, and notify the responsible person. I don't treat an unreliable sensor as proof there is no leak. I'd say to the engineer, ‘I understand the deadline, but I can't continue outside the alarm procedure.’ After the area is released, I'd help document the event and arrange the sensor or system checks through the authorized people. Restart needs the prescribed clearance. I would also ask why a known sensor issue had remained open.”

C02: “I'd carry out the site alarm response and get people out if the procedure requires it. The twenty minutes isn't negotiable while the alarm is unresolved. I'd explain that briefly and contact the authorized safety or lab lead. Once the system is cleared, I would help check the alarm history and plan the permitted recovery. I'd give the engineer a realistic revised timing, including whether the interrupted data can still be used. I tend to be very direct in those moments. Afterward I'd make time to explain my decision so it doesn't become a personal argument.”

C03: “The alarm procedure comes first. I'd follow the required response and notify the responsible people; I wouldn't stay in a potentially hazardous area to investigate the sensor. Once clearance is given, I'd preserve the alarm timestamp and available system logs so the team can investigate. I'd tell the engineer that the sensor's reliability is a separate issue requiring resolution before restart. I wouldn't call it a false alarm in the report unless the investigation established that. I generally find written procedures easier to defend than arguing verbally, so I'd keep the immediate discussion short.”

QUESTION 2

Interviewer: Today's cell voltage is noticeably higher than yesterday's at the same current. An engineer asks whether the cell has degraded. How would you investigate, and what would you report?

C01: "First I'd check whether the two results are actually comparable: temperature, pressure, water supply, conditioning time, and the test sequence. I'd also check the instrument status and whether anything changed in the setup. Any physical inspection follows the safe isolation procedure. I wouldn't adjust several things together. I'd report the difference and the conditions I've verified, then propose an approved repeat with one variable controlled at a time. My wording would be 'higher voltage observed; cause not confirmed.' I can sometimes spend too long completing checks before giving an initial update."

C02: "I'd start with the test log and the most recent changes, rather than assume the cell is the problem. Are temperature and pressure really the same, was the cell conditioned the same way, and did anyone change the water supply or measurement setup? I'd preserve the original data and agree a short diagnostic sequence within the approved procedure. If inspection is needed, we'd isolate first. I'd update the engineer quickly with observations and my leading hypothesis, clearly marked as a hypothesis. I've sometimes pursued the first plausible cause too far, so now I ask what evidence would rule it out."

C03: "I'd compare the original traces rather than only the reported average. I'd check whether we compared the same stage of the run, and line up temperature, pressure, conditioning history, and water-quality records. I'd look at measurement checks and any changes to the assembly or connections, with inspection only after safe isolation. Then I'd suggest an approved repeat that separates a setup issue from a persistent change. I'd report the size of the difference and the limits of the comparison. I enjoy investigating data, so I would agree a time limit with the engineer before going into a lengthy analysis."

QUESTION 3

Interviewer: During assembly, you discover that the supplied gasket has a different revision from the work instruction. It looks the same, and a colleague says they used it successfully last week. The test slot starts in one hour. What do you do?

C01: "I'd pause that assembly step and record the part number, revision, and batch. I'd check the released drawing and any approved substitution, then contact the owner of the instruction. Appearance and last week's result don't establish compatibility. While waiting, I could prepare the other approved components and see whether the correct gasket is available. I'd use the new revision only with the required documented authorization. If nobody with that authority is reachable, I'd let the slot go. I wouldn't be comfortable making the revision decision myself."

C02: "I'd stop at the mismatch and immediately look for the released revision history or substitution approval. I'd send the engineer the exact part details and ask for the authorized decision, rather than just say we're blocked. In parallel I'd check stock for the specified gasket and prepare the remaining materials. If the substitution is approved, I'd record the actual revision and the approval before proceeding. If it isn't, we delay. I like solving these problems quickly, but I've learned that a verbal 'it's fine' isn't enough when the assembly record says something else."

C03: "I'd hold that assembly step and identify which document is current. I'd check the drawing, material record, and change notice, because either the supplied part or the instruction could be outdated. I'd send the discrepancy to the authorized engineer with the batch details. Last week's use is useful information, but not approval. If a substitution is released, I'd record it and continue; otherwise I'd find the specified part or postpone. I'd also flag any earlier builds that used this revision for review. I wouldn't personally declare those builds faulty without checking."

QUESTION 4

Interviewer: Tell us about a mistake you made in a laboratory, how you handled it with the team, and what changed afterward.

C01: “I entered the wrong component batch in a test record after using a copied template. The measurements were valid, but the traceability wasn't. I told the engineer when I found it and checked the physical labels and assembly sheet. We corrected the entry with an audit trail and checked the related records. It hadn't affected other builds. I added a batch check to the assembly checklist. Initially I wanted someone else to verify every entry; the team pointed out that this would slow routine work. We settled on verification at the component-loading step.”

C02: “I selected an older test recipe from a folder containing several similarly named versions. The run stayed inside the equipment's safety limits, but it wasn't the requested experiment. I stopped when I noticed, told the engineer, and marked the data so it couldn't be presented as the intended test. I offered a rerun and explained exactly how I'd selected the file. I first suggested renaming everything myself, but the engineer wanted a controlled change. We introduced a released-recipe folder and a version check at startup. I still check the recipe contents, not just the filename.”

C03: “I used the wrong conversion factor in a spreadsheet for a flow measurement. Another technician noticed that my summary didn't match the instrument display. I checked the calculation and told the engineer which reports might be affected. We preserved the original measurements, corrected the derived values, and reviewed the conclusions. The equipment had been operated from its approved controls, not my spreadsheet. I was embarrassed and spent too long checking the affected files before notifying the engineer. Now I report the suspected issue first, then investigate its extent. We also added a known-value check to the template.”

QUESTION 5

Interviewer: You have ninety minutes before your shift ends. An active test needs monitoring, an engineer wants an urgent rebuild, and a new colleague needs help preparing tomorrow's experiment. How do you handle the situation and the handover?

C01: "I'd establish the active test's monitoring requirements first and confirm that a qualified person can take over. Then I'd ask what the rebuild must achieve today and agree the order with the engineer. I wouldn't start an assembly I couldn't leave in a defined state. The new colleague could do preparation they're trained for, with a scheduled check from me. I'd hand over the test status, limits, abnormalities, file locations, and unfinished work. If coverage is missing, I'd escalate early. I prefer a clear priority decision, although sometimes I ask for it when I could make it myself."

C02: "I'd keep the active test covered, then propose a plan instead of passing the whole problem back: a short preparation check with the new colleague, followed by the rebuild if it can reach a safe stopping point. I'd ask the engineer whether that matches the actual deadline. I'd call for help early if we need parallel work. I can stay occasionally if agreed, but I wouldn't make overtime the normal solution. My handover would state what's running, what's incomplete, and who owns the next action. My weak point is leaving some written notes until the end, so I reserve time for them."

C03: "I'd confirm the monitoring and coverage requirements, then make the remaining work visible: expected time, dependencies, and consequences of delay. I'd propose an order to the engineer and ask for a decision if the deadlines conflict. I'd help the new colleague identify tomorrow's required parts and approved procedure, without assigning unfamiliar work alone. For the rebuild I'd document the exact completed step. The handover would link the logs and list open issues and next actions. I tend to write more detail than colleagues need, so I'd put the immediate actions at the top and supporting information underneath."