

DRAFT - FOR REVIEW

Research note & collaboration principles

Published scientific context, exact public sources and a safe starting point for joint scoping.

United Armor Xperts A.S. | Confirmed 2 September 2026 | Capability level | Public-safe

The problem space - published context, not product claims

- Carbon-carbon needs oxidation protection for sustained hot-air service.
- Low-Earth-orbit atomic oxygen erodes susceptible polymers and carbon; thermal cycling is a separate durability stress.
- Self-sealing borosilicate coating behaviour is described in published research. It is not presented as a UAX result.
- Phenolic Impregnated Carbon Ablator (PICA) is an established civil-space thermal-protection precedent.

Exact public sources

- C. Isola et al., 'Protective glass coating for carbon-carbon composites,' Carbon 36 (1998), 1213-1218. DOI: 10.1016/S0008-6223(98)00100-6.
- B. A. Banks and K. K. deGroh, 'Low Earth Orbital Atomic Oxygen Interactions With Spacecraft Materials,' NASA/TM-2004-213400, NTRS document 20040191331.
- J. A. Dever, 'Low Earth Orbital Atomic Oxygen and Ultraviolet Radiation Effects on Polymers,' NASA Lewis Research Center, 1991, NTRS 19910009981.
- 'Multilayer coating with self-sealing properties for carbon-carbon composites,' Carbon 41 (2003). DOI: 10.1016/S0008-6223(03)00228-8.
- M. Stackpoole et al., 'Performance of a Light-Weight Ablative Thermal Protection Material for the Stardust Mission Sample Return Capsule,' NASA NTRS 20070014634.

Application contexts

Launch and re-entry hardware, process heat, solar receivers and turbine hot sections are positioning examples. They are not evidence that a UAX material has reached a threshold, passed a test or is suitable for a particular platform.

Collaboration principles

- Separate each party's background IP from collaboration-created foreground IP.
- Record inventorship contemporaneously from laboratory records.
- Agree publication boundaries before work begins.
- Negotiate ownership, prosecution, maintenance, enforcement, sublicensing, improvement rights, abandonment and field-of-use scope in the written agreement.
- Screen any cross-border transfer under the laws and transaction facts that actually apply; FEFTA is not a generic label for every Turkish civil activity.

Specific formulations, process parameters, numerical thresholds, validated models and any controlled technical information remain outside this public note. A reader may propose a non-sensitive scoping call without sending technical data.