

**CORNET Call for Proposals: International Collective Research**  
**--- Project idea ---**

Subject:	<b>NEW COMPOSITE PRODUCTION METHOD WITH UV-CURABLE RESIN</b>
Coordinator:	Etkin Proje (international R&D project management and incentive consultancy company)
Other applicant(s):	POLİN Waterparks (Company/Water Park Supplier) <a href="https://tr.polin.com.tr/">https://tr.polin.com.tr/</a>
Sector:	<input checked="" type="checkbox"/> Materials <input type="checkbox"/> Process Engineering, Energy Technology and Environment <input type="checkbox"/> Business Management and Organisation <input type="checkbox"/> Construction and Production <input type="checkbox"/> Chemistry, Textile, Food, Health and Medical <input type="checkbox"/> Measurement and Information
Target group:	All industries
Proposal summary:	<p>UV-curing are polymerised and cured in a short time by the energy radiated from ultraviolet irradiation devices compared to traditional resin and are appropriate materials for hand lay-up method, since they require light source to cure. Opaque surface of close-mould applications creates significant challenge for using UV curable resins in operation.</p> <p>This project is aimed to provide a new curing approach for close moulding application on complex-shaped composite production with silicon bag moulding as upper mould.</p> <p><b>R&amp;D Attributes and Innovative Aspects:</b></p> <ul style="list-style-type: none"> <li>- Close-moulding adaptation: Adjustment of UV-cured resin to close-mould curing system, in terms of viscosity, dimensional stability etc.</li> <li>- Modification of RTM technique significantly shortens production time and also provides ease of composite production with inverse angles and parts that challenges demolding procedure.</li> <li>- Providing UV light source to enable curing over the surface of complex shaped composite</li> </ul>

	<ul style="list-style-type: none"> <li>- The system mentioned in this project will be used in waterparks and entertainment industry, for the first time.</li> </ul> <p><b>Expected outcomes and benefits</b></p> <p>In this closed mould production system, the aim is the adjustment of UV-curable resin system with using silicone bag as upper mould. By using silicone bag, complex structures with inverse angle are enabled to produce and also UV-curable resin significantly shortens production time. Another benefit of close-mould system is the ability of lowering emission level. In addition, because they do not cure without UV irradiation, there is no time limiting requirement for starting molding process.</p> <p>Curing profiles can be started and completed according to demand. Moreover, absence of UV-light results with remaining uncured residual resin. Therefore, resin consumption and wastage will decrease, so that, the system mentioned in this project will provide environmentally friendly and cost-efficient production technique.</p>
Dissemination concepts:	Through various sources
Profile of additional partners:	We are looking for any research/industry partners to contribute to this project idea.
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