

**Applied multidisciplinary research and development of advanced cooling methods  
for technological processes**

In sum, this multidisciplinary project will address the prevailing issue of the precise control of thermal processes in the manufacturing tools, via innovative temperature control technology based on the high cooling potential of liquefied industrial gases directed towards the critical heat-stressed areas of the production tools, so as to achieve a more effective transfer of heat from the product and tools, in the shortest time, and with a favourable impact on the quality and cost of production.

Code	TA03010492
State providing funder	Technology Agency of the Czech Republic <a href="https://www.tacr.cz/en/homepage/">https://www.tacr.cz/en/homepage/</a>
Programme	ALFA Programme(2011-2016) <a href="https://www.tacr.cz/en/alfa-programme/">https://www.tacr.cz/en/alfa-programme/</a>
Total eligible costs	13 595 000 CZK
Total project subsidy	8 636 000 CZK
Subsidy FME TUL	5 080 000 CZK
TUL project number	14120
Contractor	TUL, Faculty of Mechanical Engineering
Project participants	GDK spol. s r.o. <a href="https://www.gdk.cz/">https://www.gdk.cz/</a> KOH-I-NOOR PONAS s.r.o. <a href="https://www.kinmachinery.cz/en/ponas/about-us">https://www.kinmachinery.cz/en/ponas/about-us</a> KSM Casting CZ a.s. <a href="https://www.aliaz.cz/">https://www.aliaz.cz/</a>
Principal investigator TUL	Ing. Iva Nováková, Ph.D.
Department	Department of Engineering technology <a href="http://www.fs.tul.cz/en/technology/polymers-and-composites/research-and-innovations/">http://www.fs.tul.cz/en/technology/polymers-and-composites/research-and-innovations/</a>
Period	2013-2015

<https://www.rvvi.cz/cep?s=jednoduche-vyhledavani&ss=detail&n=0&h=TA03010492>

<b>Costs (year) TUL</b>	2013	2014	2015	Total
Non-Investment (CZK)	1 820 000	2 170 000	1 090 000	5 080 000
Investment (CZK)	0	0	0	0
<b>Total (CZK) TUL</b>	1 820 000	2 170 000	1 090 000	5 080 000

**Project results EN**

2013	<a href="https://www.rvvi.cz/cep?s=jednoduche-vyhledavani&amp;ss=detail&amp;n=0&amp;h=TA03010492">RIV/46747885:24210/13:#0004498</a>
2013	<a href="https://www.rvvi.cz/cep?s=jednoduche-vyhledavani&amp;ss=detail&amp;n=0&amp;h=TA03010492">RIV/46747885:24210/13:#0004499</a>
2013	<a href="https://www.rvvi.cz/cep?s=jednoduche-vyhledavani&amp;ss=detail&amp;n=0&amp;h=TA03010492">RIV/46747885:24210/13:#0004501</a>
2013	<a href="https://www.rvvi.cz/cep?s=jednoduche-vyhledavani&amp;ss=detail&amp;n=0&amp;h=TA03010492">RIV/46747885:24210/13:#0004505</a>
2013	<a href="https://www.rvvi.cz/cep?s=jednoduche-vyhledavani&amp;ss=detail&amp;n=0&amp;h=TA03010492">RIV/46747885:24210/13:#0004558</a>
2014	<a href="https://www.rvvi.cz/cep?s=jednoduche-vyhledavani&amp;ss=detail&amp;n=0&amp;h=TA03010492">RIV/46747885:24210/14:#0006422</a>
2014	<a href="https://www.rvvi.cz/cep?s=jednoduche-vyhledavani&amp;ss=detail&amp;n=0&amp;h=TA03010492">RIV/46747885:24210/14:#0006438</a>
2014	<a href="https://www.rvvi.cz/cep?s=jednoduche-vyhledavani&amp;ss=detail&amp;n=0&amp;h=TA03010492">RIV/46747885:24210/14:#0006439</a>

2014		<a href="#">RIV/46747885:24210/14:#0006440</a>
2014		<a href="#">RIV/46747885:24210/14:#0006442</a>
2014		<a href="#">RIV/46747885:24210/14:#0006445</a>
2014		<a href="#">RIV/46747885:24210/15:#0006691</a>
2014		<a href="#">RIV/46747885:24210/15:#0006692</a>
2014		<a href="#">RIV/46747885:24210/15:#0006693</a>
2014		<a href="#">RIV/46747885:24210/15:#0006694</a>
2014		<a href="#">RIV/46747885:24210/15:#0006695</a>
2014		<a href="#">RIV/46747885:24210/15:#0006696</a>
2014		<a href="#">RIV/46747885:24210/15:#0006697</a>
2015		<a href="#">RIV/46747885:24210/15:#0006698</a>
2015		<a href="#">RIV/46747885:24210/15:#0006699</a>
2015		<a href="#">RIV/46747885:24210/15:#0006700</a>
2015		<a href="#">RIV/46747885:24210/15:#0006701</a>
2015		<a href="#">RIV/46747885:24210/15:#0006702</a>
2015		<a href="#">RIV/46747885:24210/15:#0006703</a>
2016		<a href="#">RIV/46747885:24210/15:00002352</a>
2016		<a href="#">RIV/46747885:24210/15:00002873</a>
2016		<a href="#">RIV/46747885:24210/16:00000359</a>
2016		<a href="#">RIV/46747885:24210/16:00000458</a>
2016		<a href="#">RIV/46747885:24210/16:00001025</a>
2016		<a href="#">RIV/46747885:24210/16:00001025</a>
2016		<a href="#">RIV/46747885:24620/16:00000359</a>