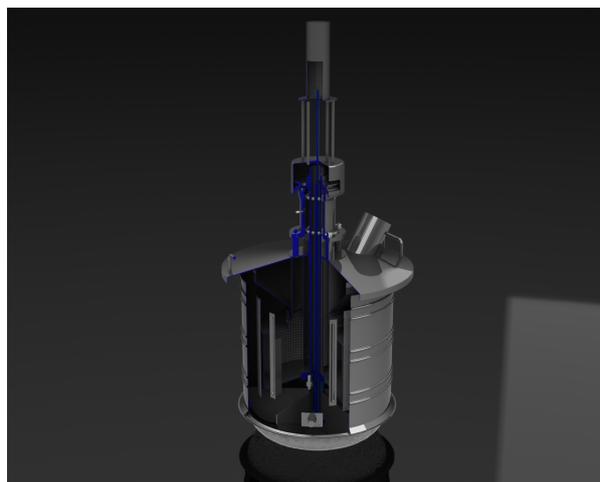




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Rotating vibro-granulator for nitrogen fertilizers fusion



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Rotating vibro-granulator is applied in the chemical industry and is intended for dispersion fusion of nitrogen fertilizers on uniform drops in the granulation tower with their following cooling and crystallization into solid granules/prills in the process of a free fall in the up-coming stream of cooling air.

Sumy State University acts as an invention applicant and therefore an owner of more than 80 copyright certificates and patents for means and instrument design of granulation processes for various substances (including about 40 designs of vibro-granulators and filters for nitrogen fertilizers fusion); more than 200 scientific publications devoted to substances granulation process, incl. 2 monographies.

Granulometric composition, %	Centrifugal granulator of firm "Kreber"	Acoustics granulator designed by Research Institute at the Chemical plant	Rotating vibro-granulators
• 1-4 mm	97-99	98-99	more than 99
• 2-4 mm	83-92	85-95	90-97
• 2-3 mm	75-90	80-90	more than 90
• 2, 0-2,5 mm	40-50	45-65	more than 80
• less than 1 mm	0,8-2,5	0,8-1,5	0,1-0,8

Estimated economic effect of the modernized granulator, developed by specialists of Sumy State University, is more than 300 thousand dollars a year for the AS- 60 apparatus; which is achieved by reducing product loss with the dust. Beside that, the environmental benefit from reduced pollution is about 1 million UAH a year.

Rotating vibro-granulator is used in the chemical industry in particularly by companies producing nitrogen and complex mineral fertilizers.



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Rotating vibro-granulator is ready for operation.

About 40 designs of rotating vibro-granulators for fusion, developed and manufactured at Sumy State Universities, successfully operate at more than 70% of chemical enterprises producing ammonia nitrate in CIS, Poland, Bulgaria, Qatar, Cuba and other countries.

The design documentation and equipment of rotating vibro-granulator designed and manufactured by Sumy State University are certificated by NP "SC NASTHOL» № ROSS UA.AЯ45.A01112 from 22.08.2006, № ROSS UA.AЯ45. A01260 from 24.04.2008; C-UA. AЯ45. A.00058 from 13.12.2013.; authorized for use by Russian Federal Agency of Ecologic, Technologic and Nuclear Supervision № PPC 00-22575. The development and production unit of granulation and mass-exchange equipment is certificated, as the one that meets the requirements of ISO 9001:2000, certificate HU 08/3130 from 28.03.2008 and is certified in BUREAU VERITAS (certificate № KIV/ITD/096/2010). Sumy State University took part in the "All Ukrainian Awards -2009" and its rotating vibro-granulator took the first prize in the category "Invention of 2009"