ҚҰЙЫН ТУДЫРУ АРҚЫЛЫ ЭНЕРГИЯНЫ БӘСЕҢДЕТУ

Орындаған:Амангелді А.А,Иманбай М.Е.,Айсариев Р.

- Жұмыстың мақсаты:

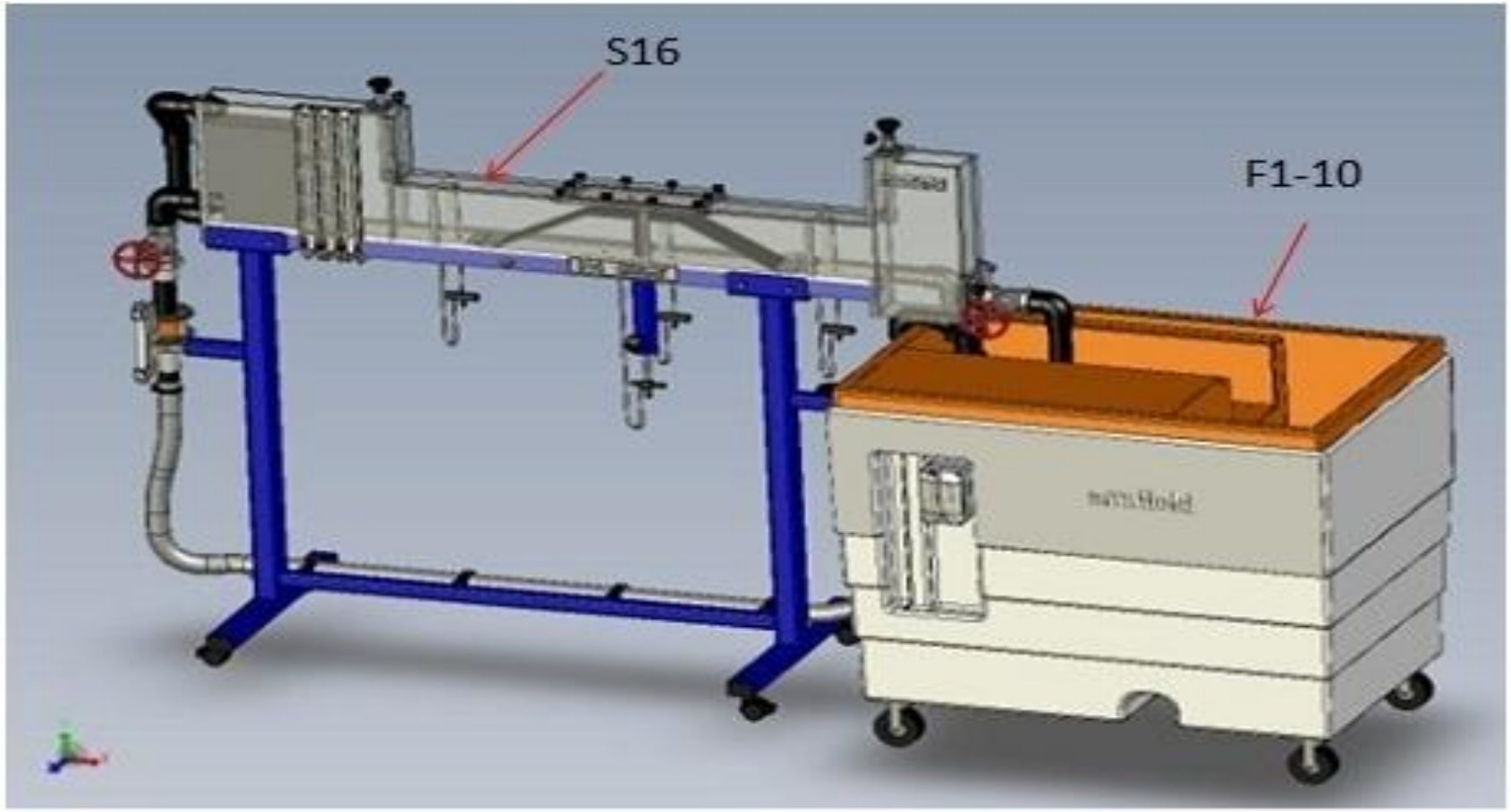
Тәжірибе кезіндне құйынның туатындығына көз жеткізу.

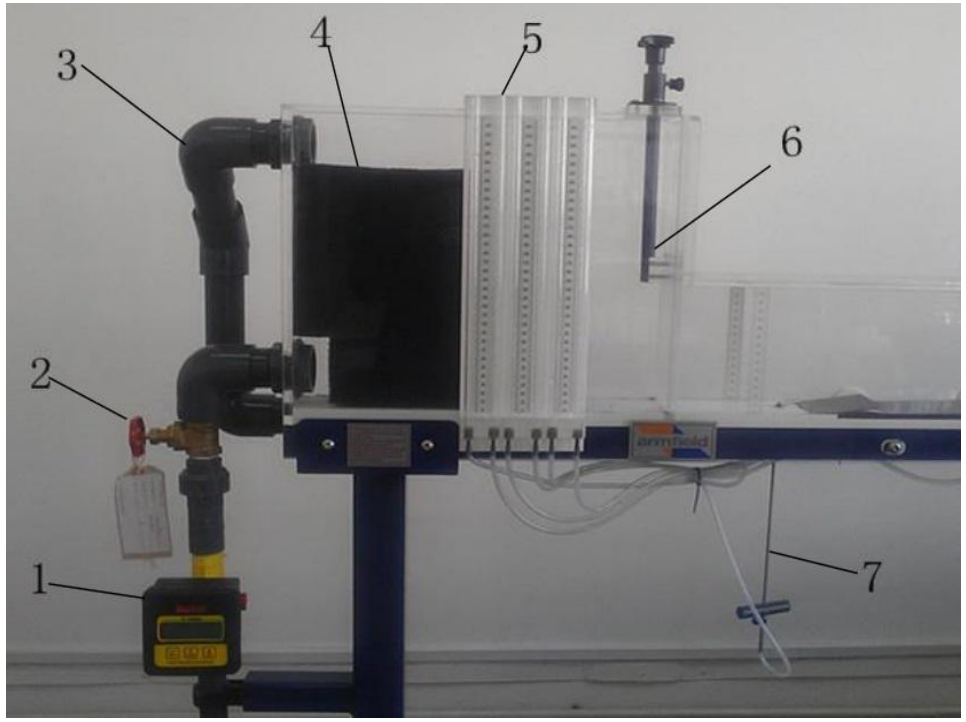
Энергияның өзгерісін зерттеу және әр түрлі кедергілерді орналастыру арқылы тиімдісін анықтау.

- Жұмыстың өзектілігі:

Елді мекендерді мелиорациялық суару және құрғату,көлік және өнеркәсіп орындарын сумен жабдықтау, пайдаланылған суды елді мекеннен сыртқа ағызып жіберу, балық шаруашылығына қолайлы жағдайлар жасау, елді мекендерді, өнеркөсіп орындарын, көлік жолдарын, байланыс желілерін т.б. түрлі құрылыстарды су апатынан қорғау.

ARMFIELD S16 ТӘЖІРИБЕЛІК ҚҰРЫЛҒЫСЫ

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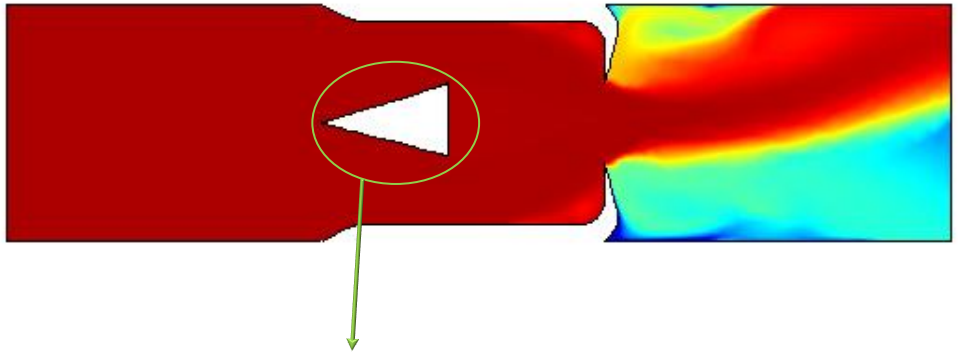
КЕДЕРГІНІ ТАҢДАУ



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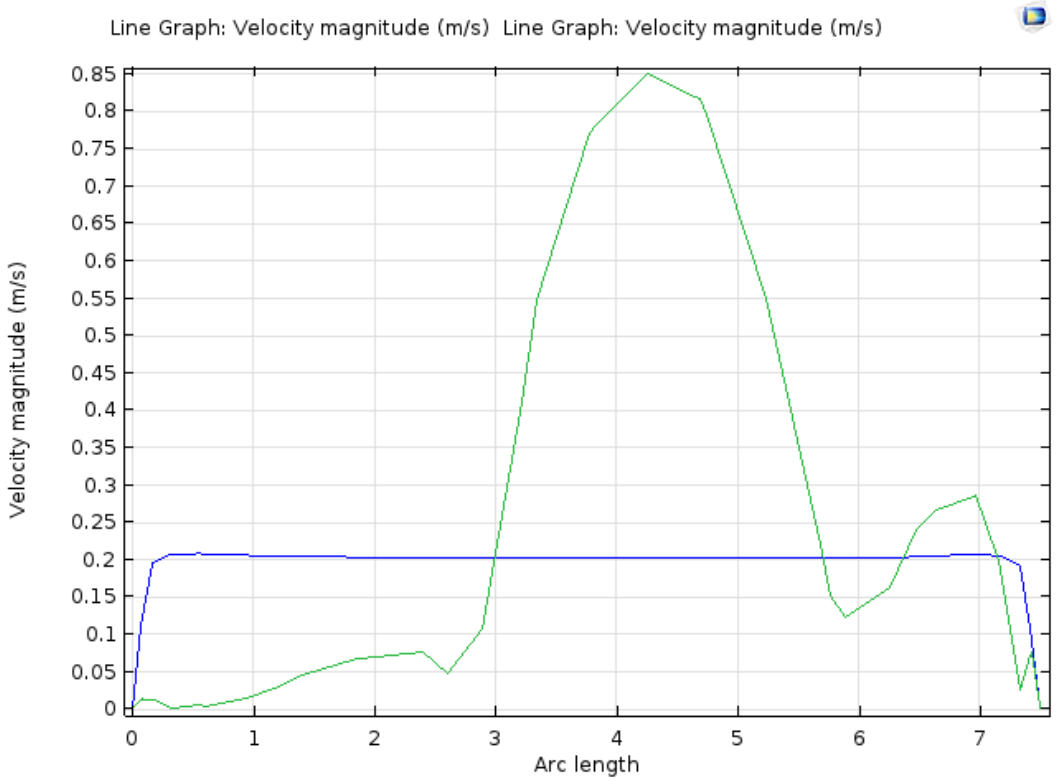

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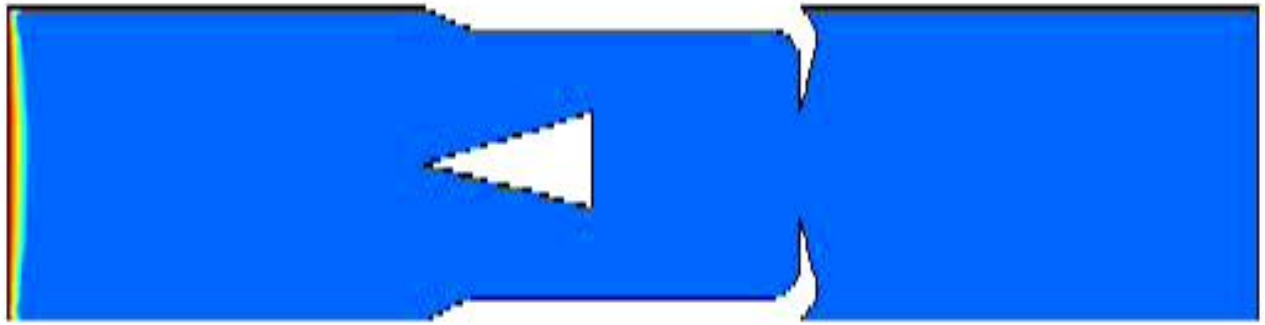
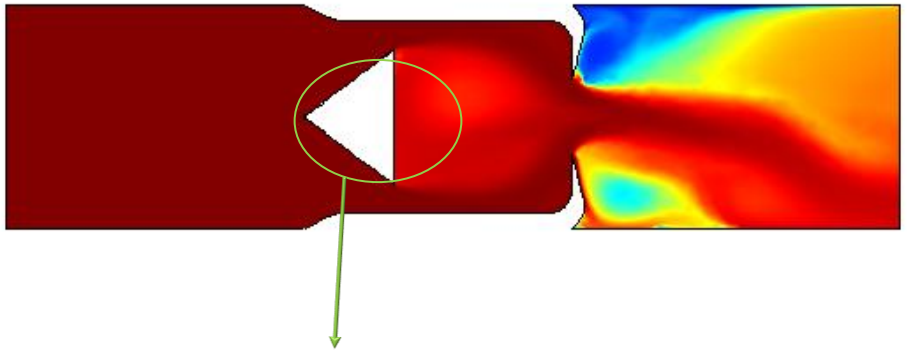
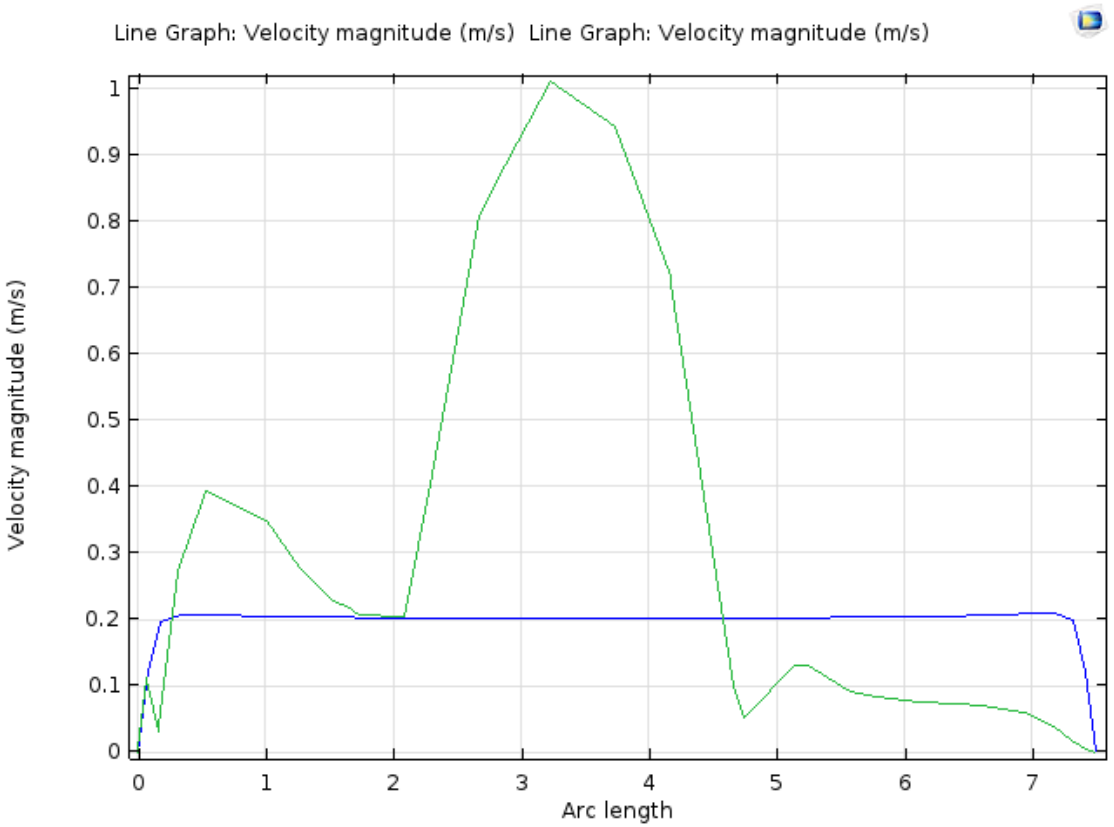


КЕДЕРГІНІ ТАҢДАУ



Үшбұрыш таңдаймыз

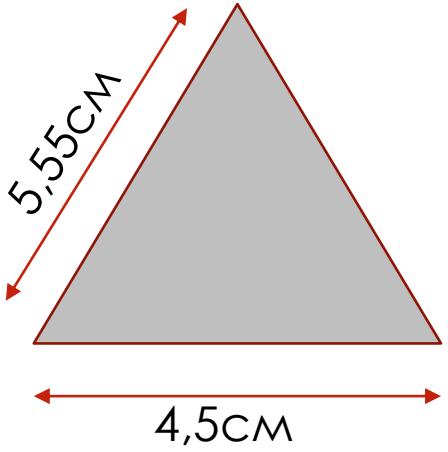


Ұзындық бойынша жылдамдықтың өзгеруі.

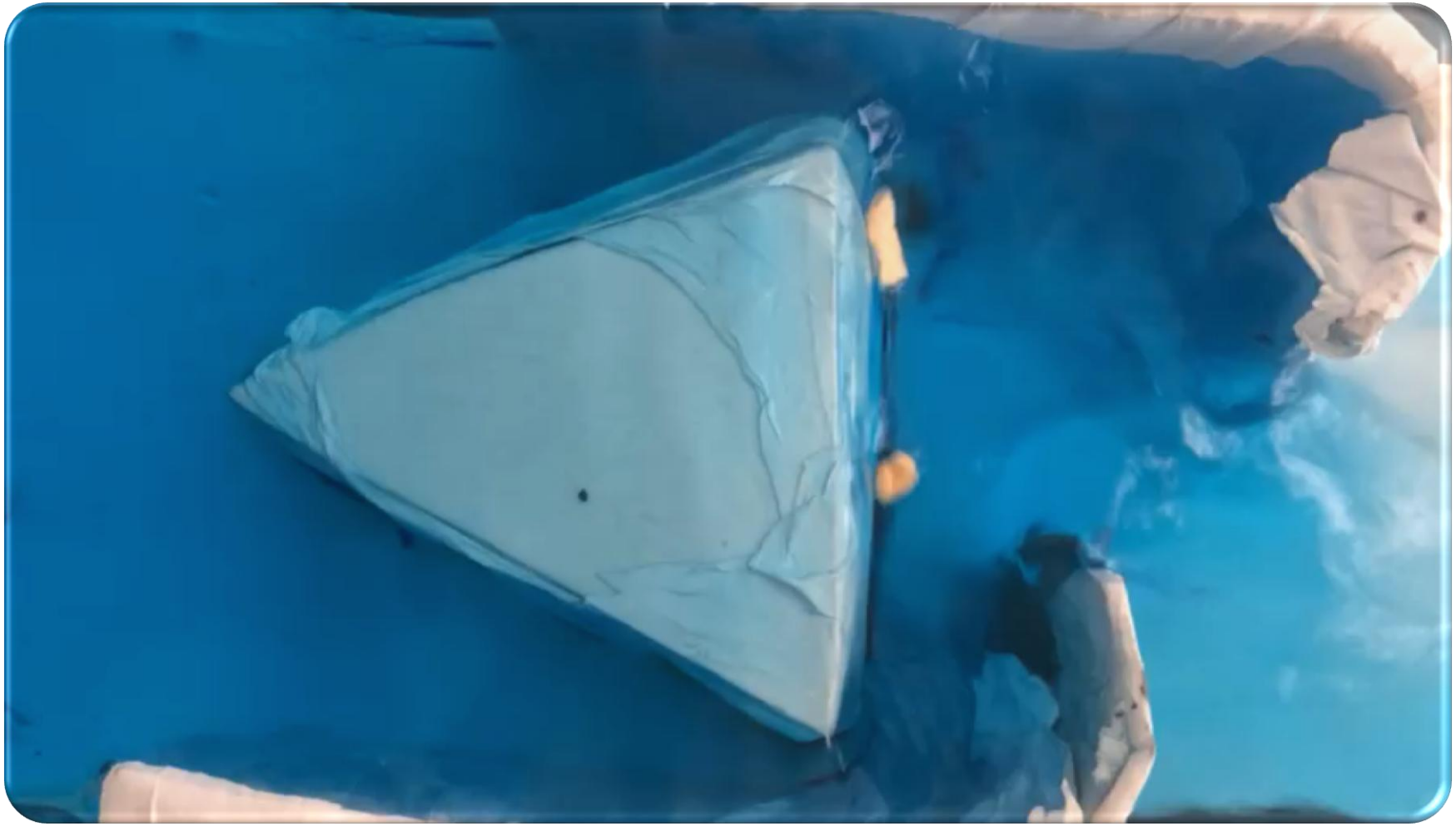
КЕДЕРГІ РЕТІНДЕ ҚОЛДАНЫЛҒАН МАТЕРИАЛДАР

Құйын тудырғыш материал

Үшбұрыш кедергісі

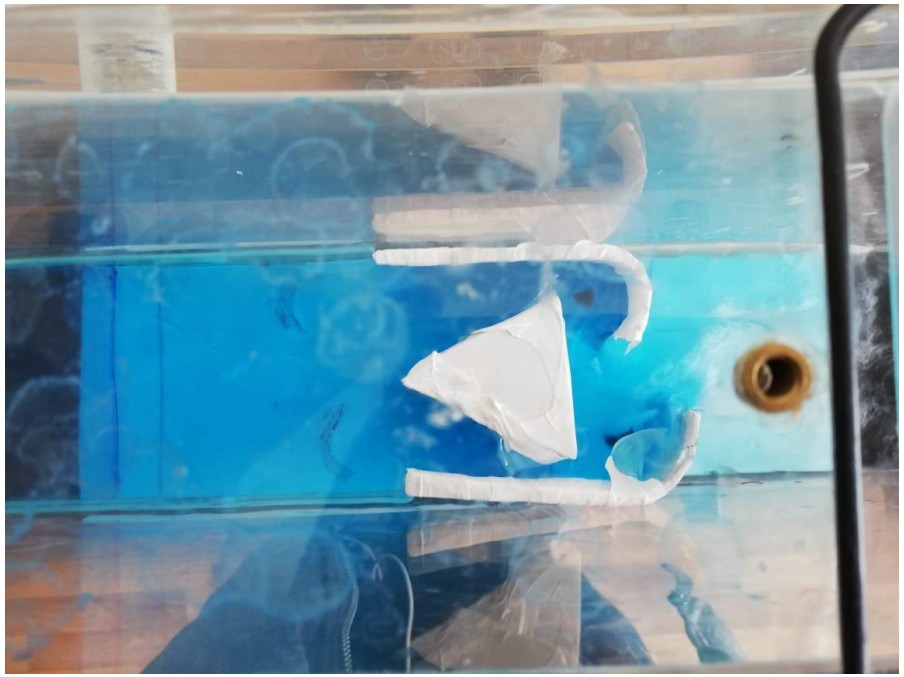


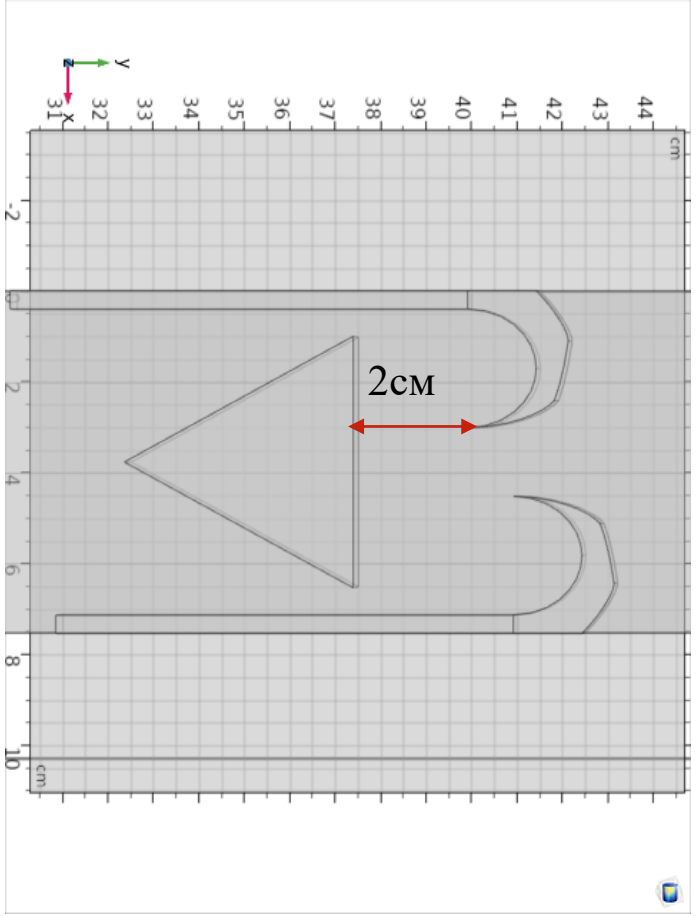
ҚҰЙЫННЫҢ ПАЙДА БОЛУЫНА КӨЗ ЖЕТКІЗУ



ТӘЖІРИБЕ НӘТИЖЕЛЕРІ

- **1 режим**



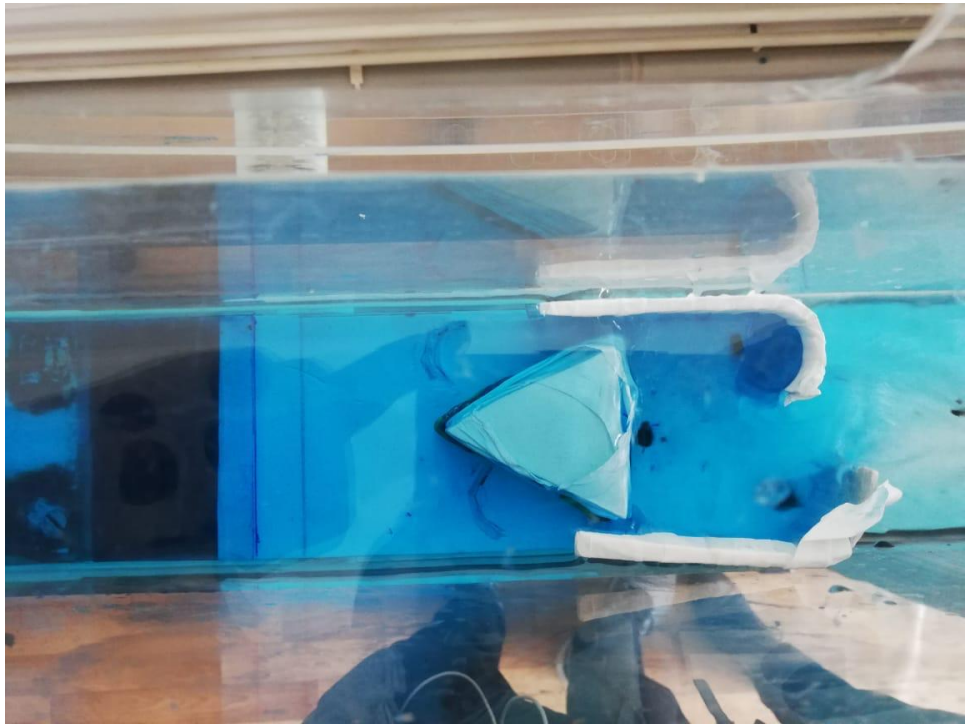


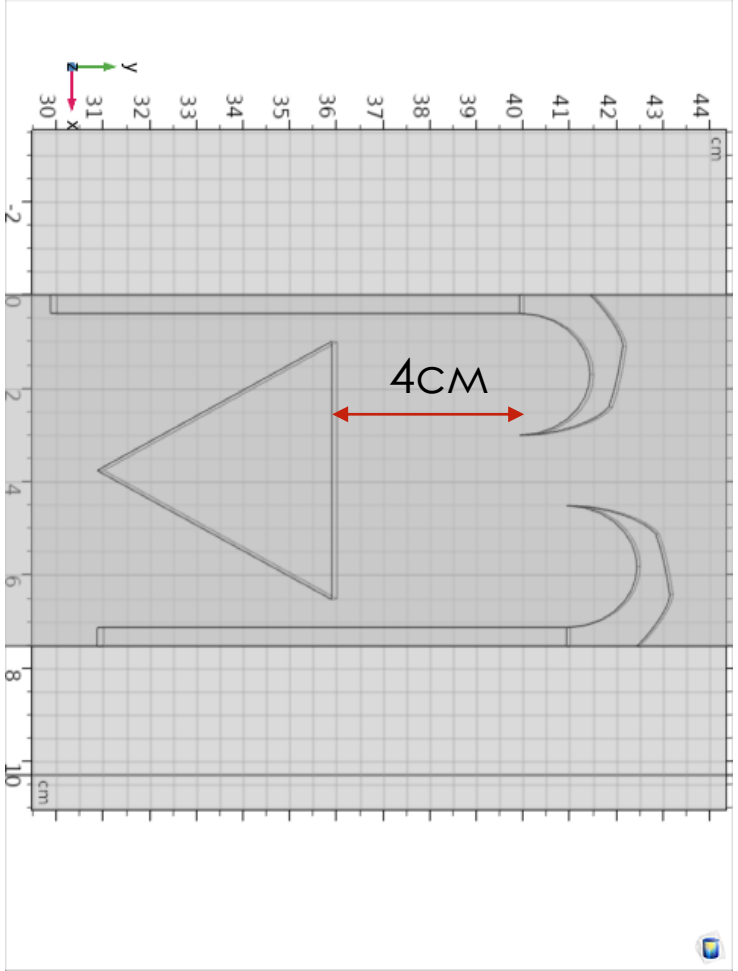
- $h_c = 0{,}004\text{м}$
- $h_{\text{к.т}} = 0{,}043\text{м}$
- $Q = 168 * \frac{10^{-6}\text{м}^3}{\text{с}}$
- $q = \frac{Q}{b} = 0{,}00224\ \text{м}^2/\text{с}$
- $v_c = \frac{q}{h_c} = 0{,}56\ \text{м/с}$
- $v_{\text{кт}} = \frac{q}{h_{\text{кт}}} = 0{,}052\ \text{м/с}$

$$\triangle E = \Upsilon q \frac{v_c^2 - v_{\text{КТ}}^2}{2g} = 0{,}0355$$

ТӘЖІРИБЕ НӘТИЖЕЛЕРІ

- **2-режим**





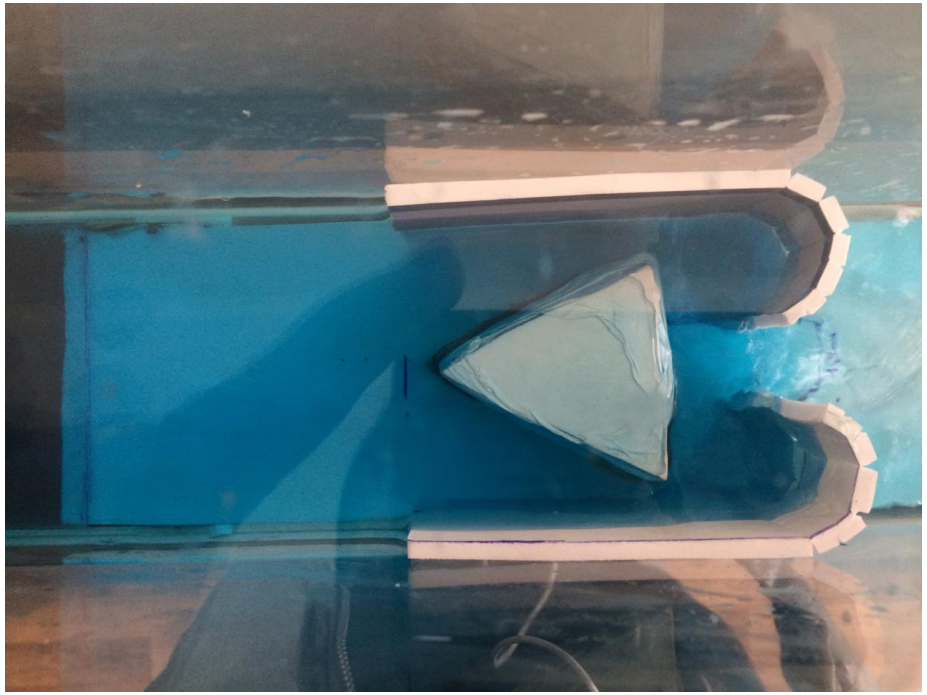
ТӘЖІРИБЕ НӘТИЖЕЛЕРІ

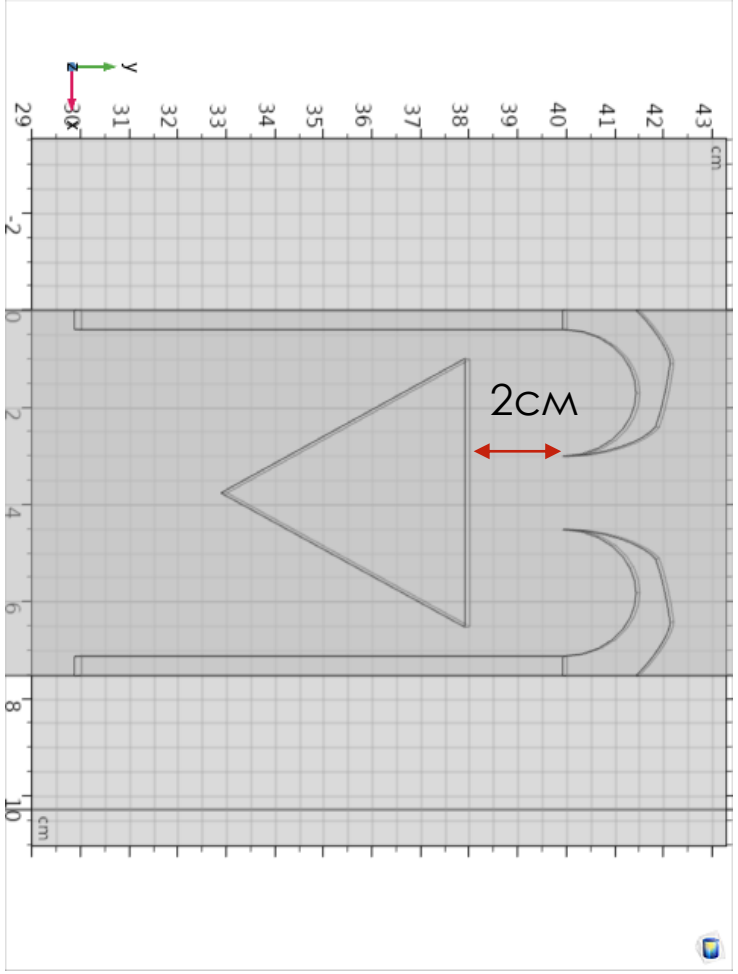
- $h_c = 0{,}005\text{м}$
- $h_{\text{к.т}} = 0{,}0435\text{м}$
- $Q = 168 * \frac{10^{-6}\text{м}^3}{\text{с}}$
- $q = \frac{Q}{b} = 0{,}00224\ \text{м}^2/\text{с}$
- $v_c = \frac{q}{h_c} = 0{,}448\ \text{м/с}$
- $v_{\text{кт}} = \frac{q}{h_{\text{кт}}} = 0{,}052\text{м/с}$

$$\triangle E = \Upsilon q \frac{v_c^2 - v_{\text{КТ}}^2}{2g} = 0{,}0226$$

ТӘЖІРИБЕ НӘТИЖЕЛЕРІ

- **3-жағдай**



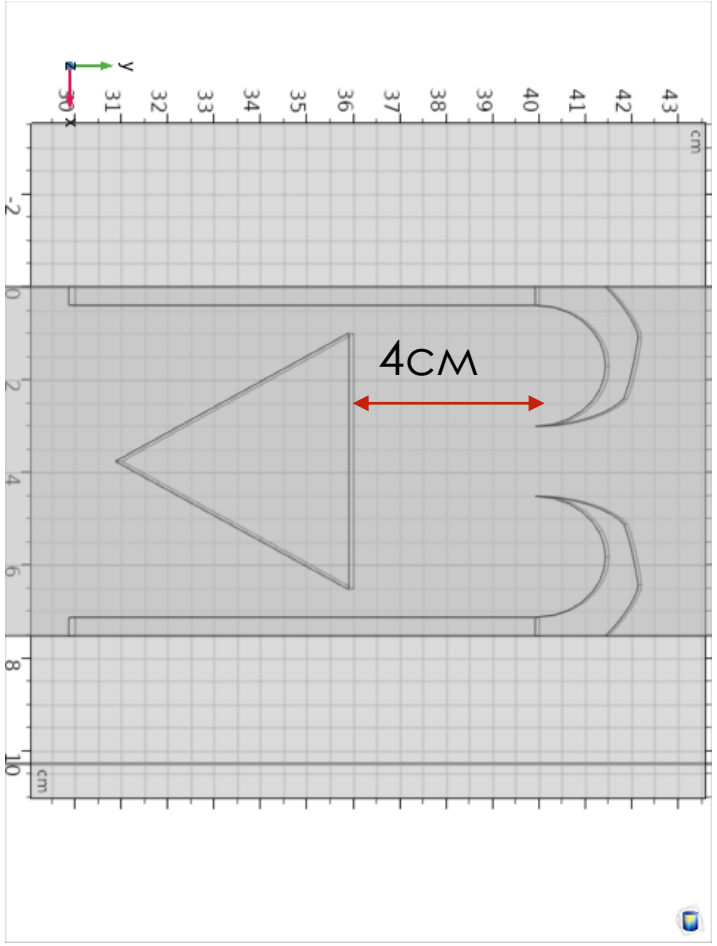


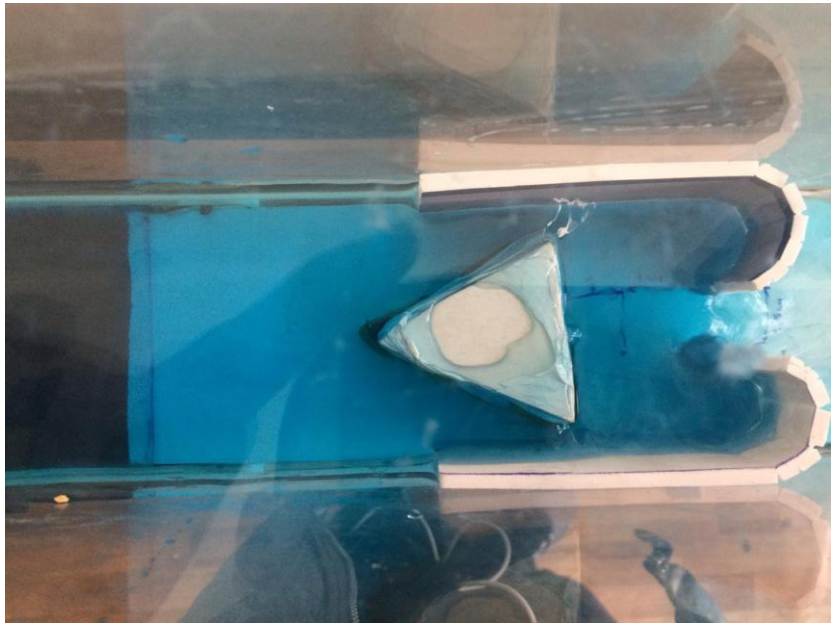
- $h_c = 0{,}005\text{м}$
- $h_{\text{к.т}} = 0{,}0465\text{м}$
- $Q = 241 * \frac{10^{-6}\text{м}^3}{\text{с}}$
- $q = \frac{Q}{b} = 0{,}003213\ \text{м}^2/\text{с}$
- $v_c = \frac{q}{h_c} = 0{,}64\ \text{м/с}$
- $v_{\text{кт}} = \frac{q}{h_{\text{кт}}} = 0{,}069\text{м/с}$

$$\triangle E = \Upsilon q \frac{v_c^2 - v_{\text{КТ}}^2}{2g} = 0{,}0663$$

ТӘЖІРИБЕ НӘТИЖЕЛЕРІ

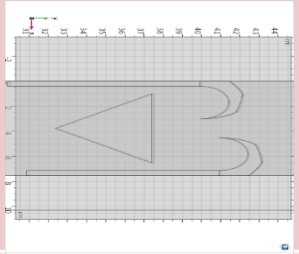
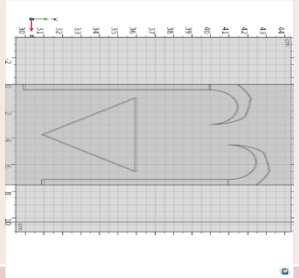
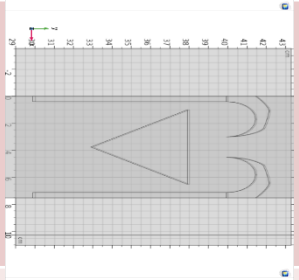
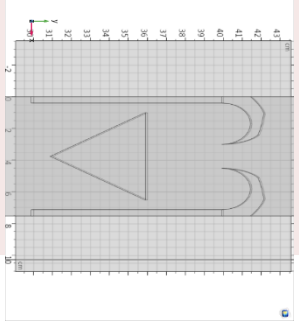
- **4-жағдай**

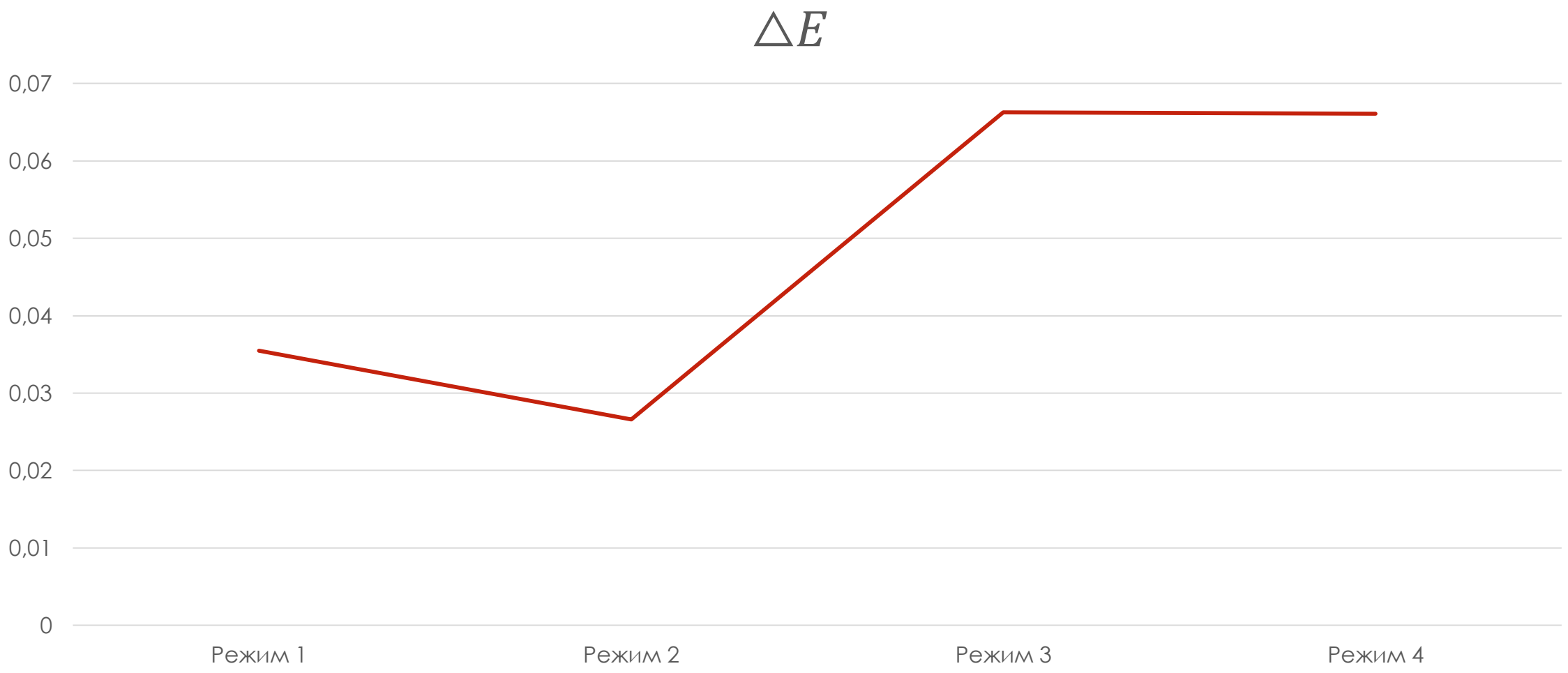




- $h_c = 0{,}005\text{м}$
- $h_{\text{к.т}} = 0{,}0455\text{м}$
- $Q = 241 * \frac{10^{-6}\text{м}^3}{\text{с}}$
- $q = \frac{Q}{b} = 0{,}003213\ \text{м}^2/\text{с}$
- $v_c = \frac{q}{h_c} = 0{,}64\text{м/с}$
- $v_{\text{кт}} = \frac{q}{h_{\text{кт}}} = 0{,}071\text{м/с}$

$$\triangle E = \Upsilon q \frac{v_c^2 - v_{\text{КТ}}^2}{2g} = 0{,}0661$$

Кедергілер	$h_{кт}$ [м]	$v_{кт}$ [м/с]	$\triangle E$ [кг * $\frac{м}{с}$]
	0,043	0,052	0,0355
	0,0435	0,0528	0,0266
	0,0465	0,069	0,0663
	0,0455	0,071	0,0661


$\triangle E$
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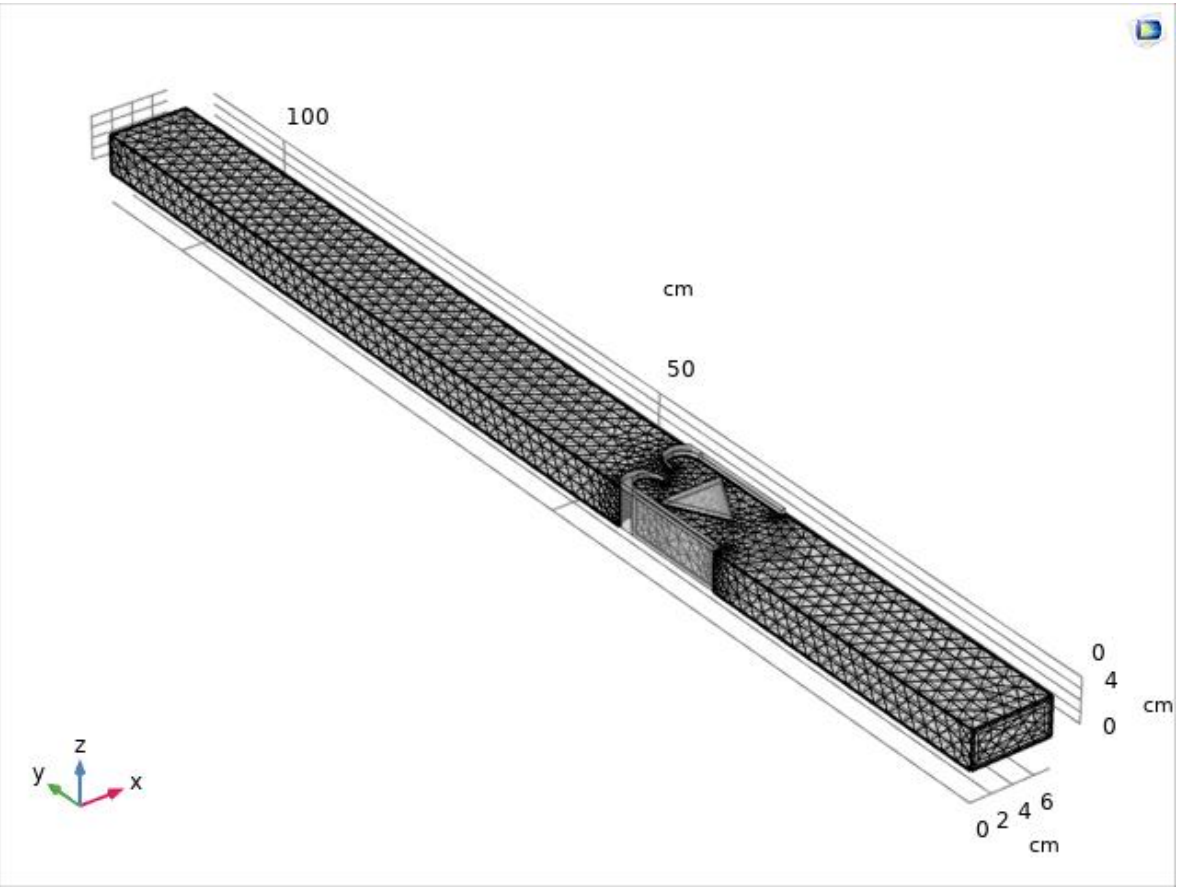
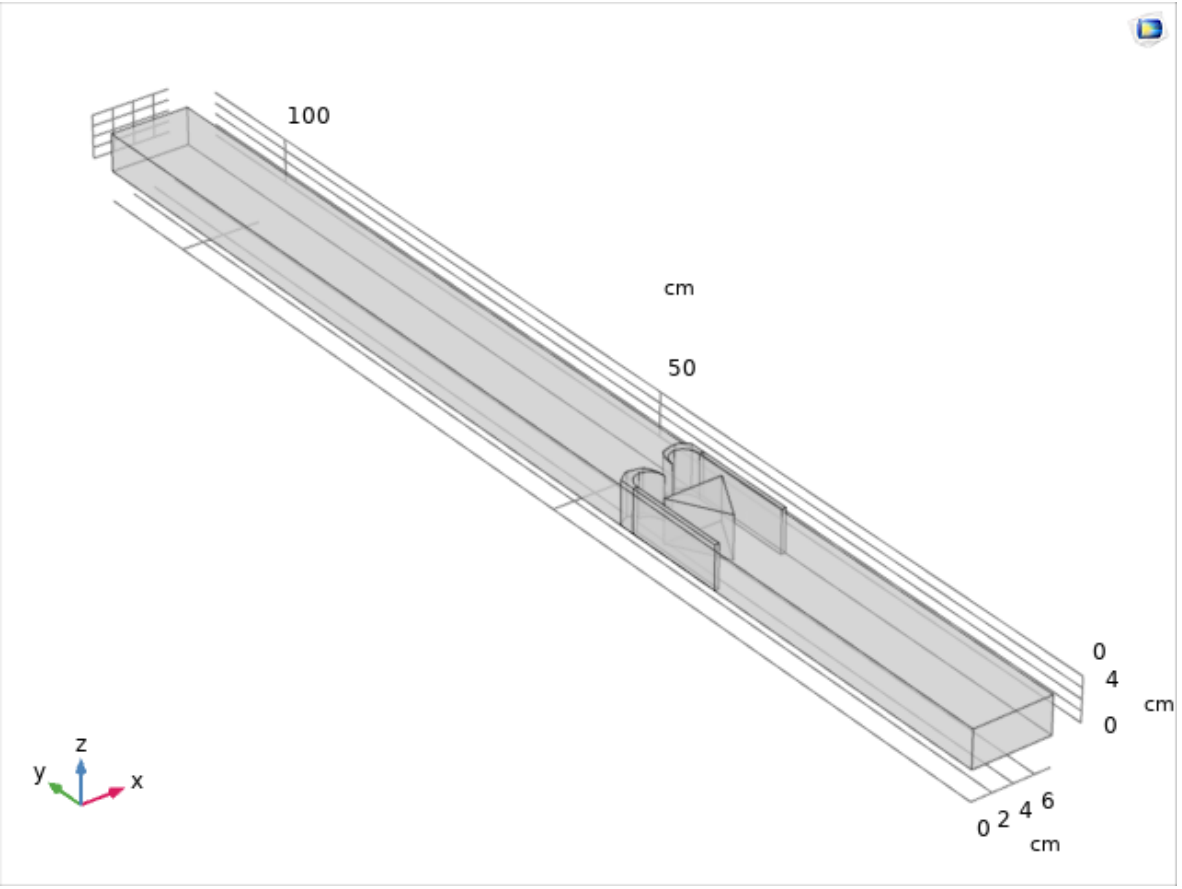
Режим 1
Режим 2
Режим 3
Режим 4

COMSOL MULTIPHYSICS ПАКЕТ ПРОГРАММАСЫНЫҢ НӘТИЖЕЛЕРІ

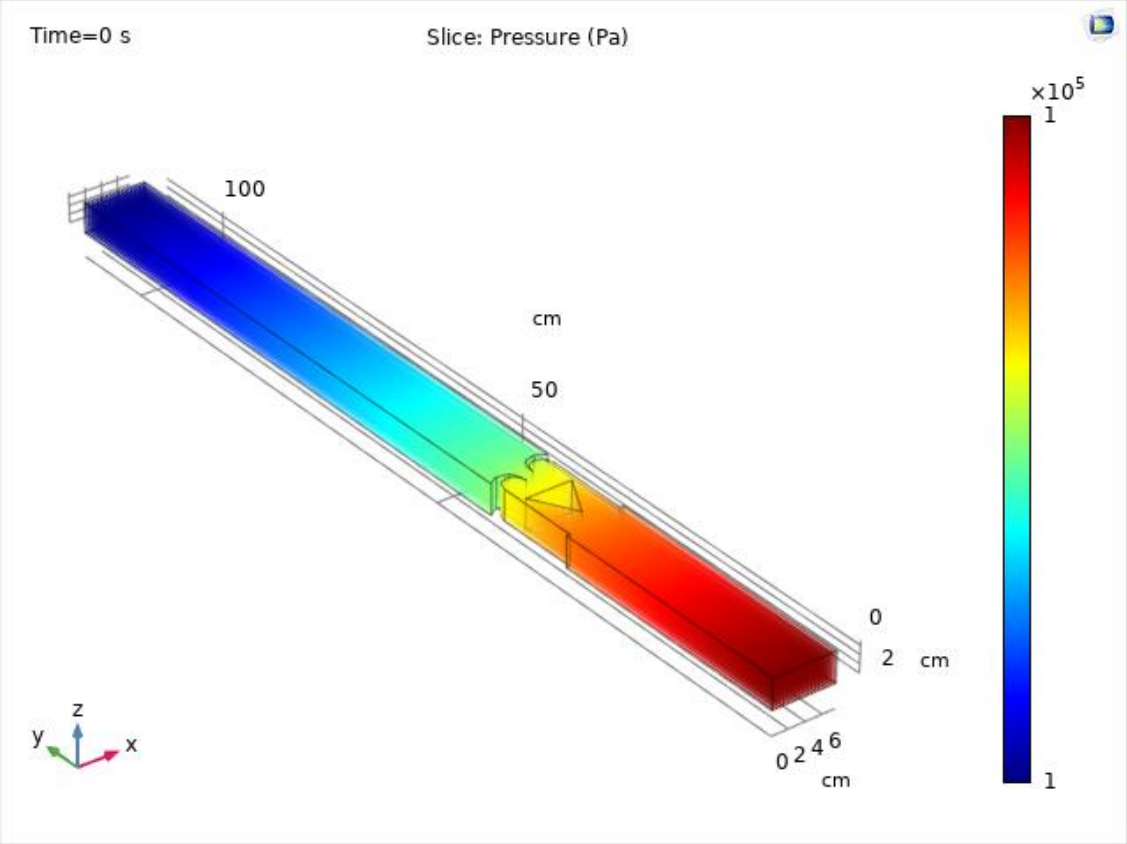
1-РЕЖИМ МОДЕЛІ



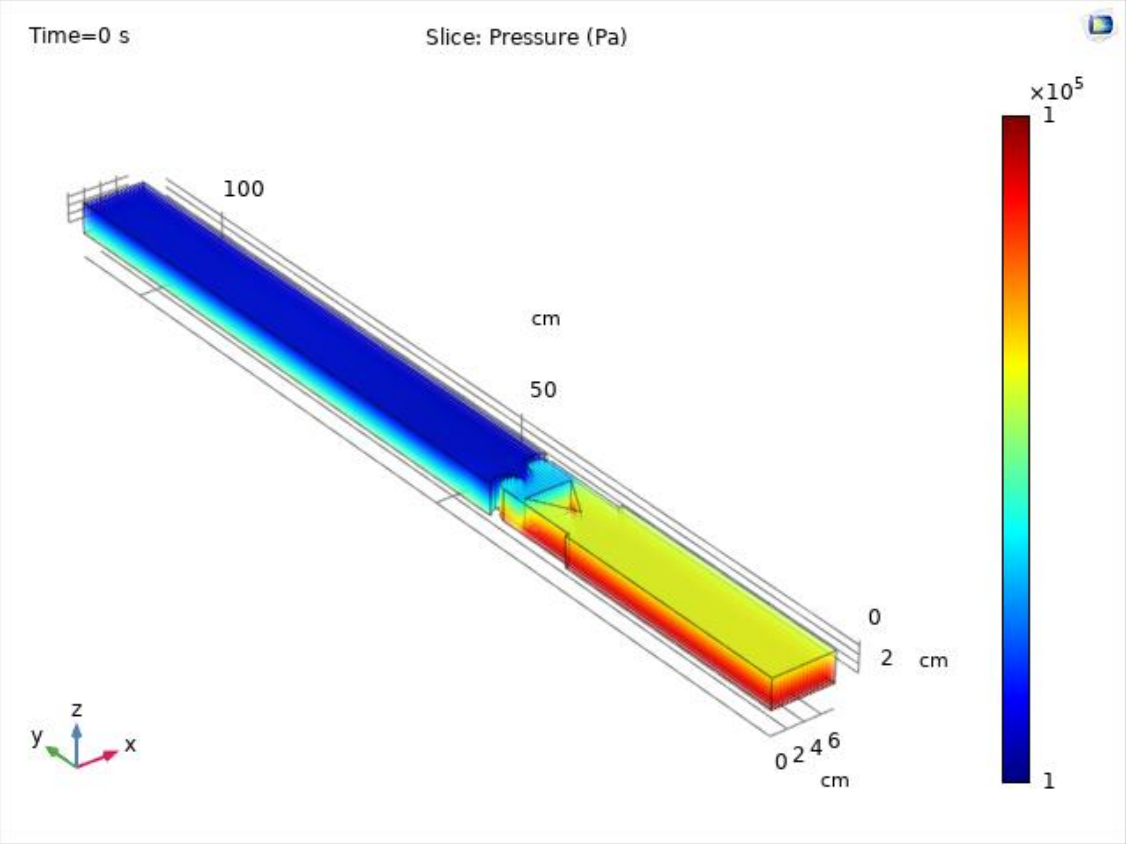


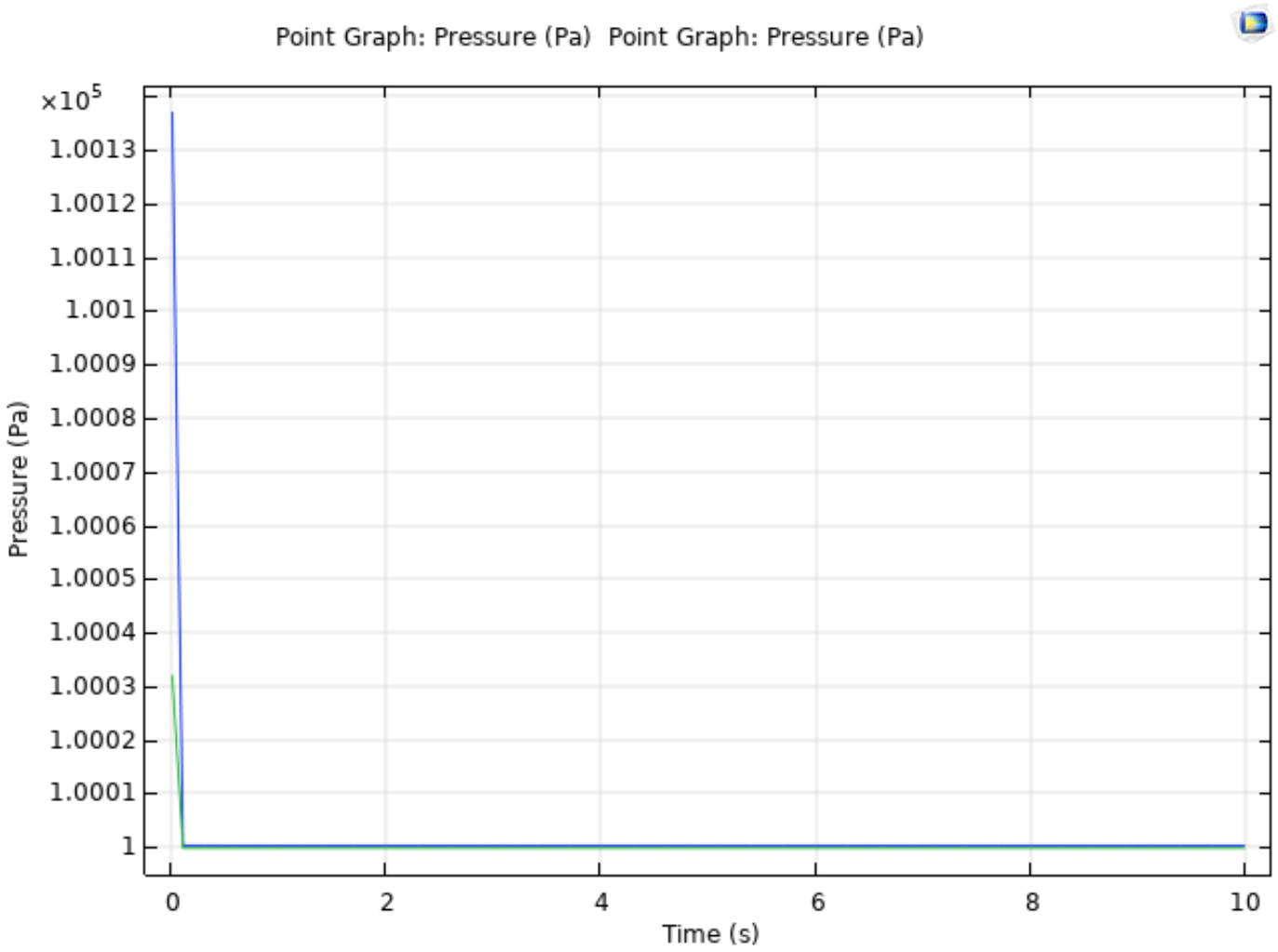
1-РЕЖИМДЕГІ ҚЫСЫМНЫҢ ӨЗГЕРУ КӨРІНІСІ

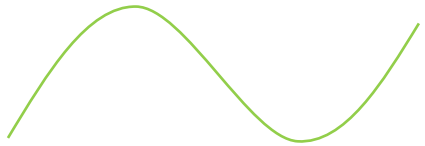
Бастапқы



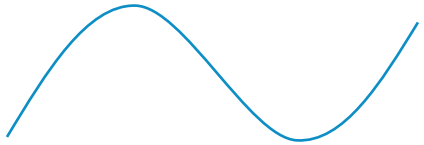
Соңғы







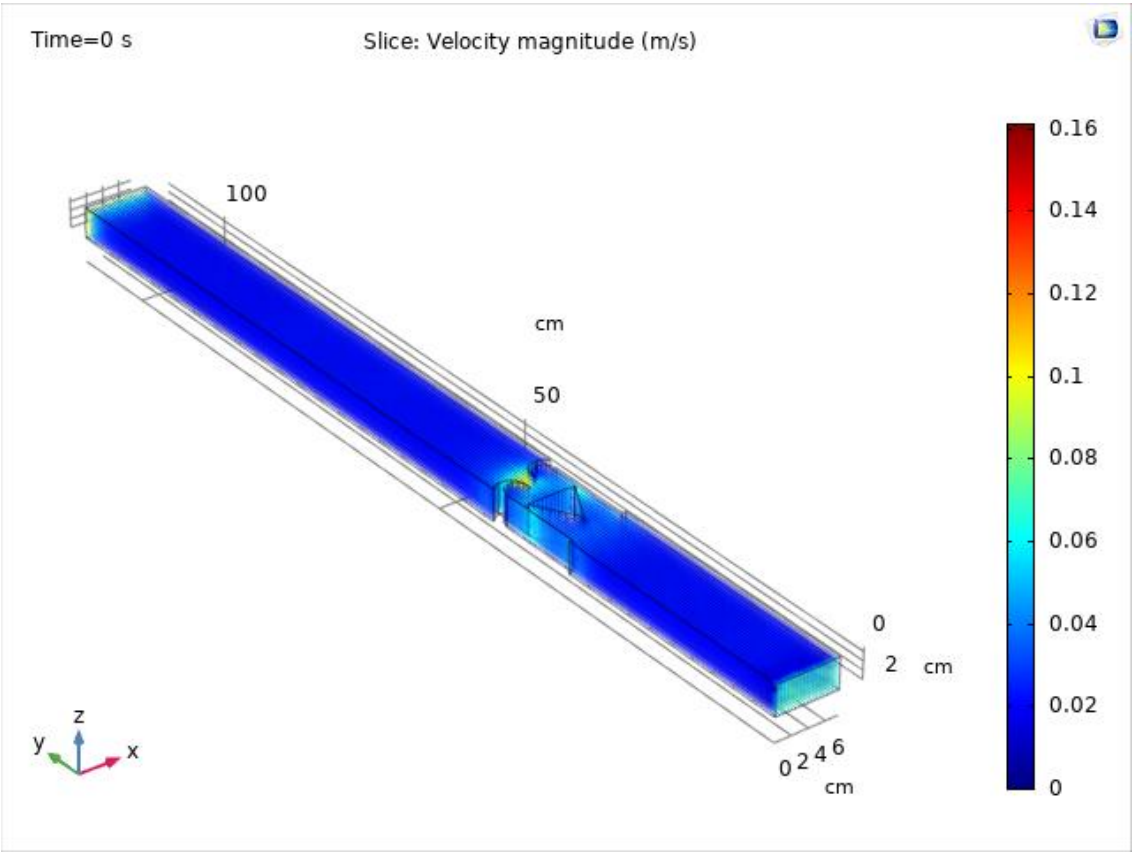
Кедергіге дейінгі



Кедергіден кейінгі

1-РЕЖИМДЕГІ ЖЫЛДАМДЫҚТЫҢ ӨЗГЕРУ КӨРІНІСІ

Бастапқы



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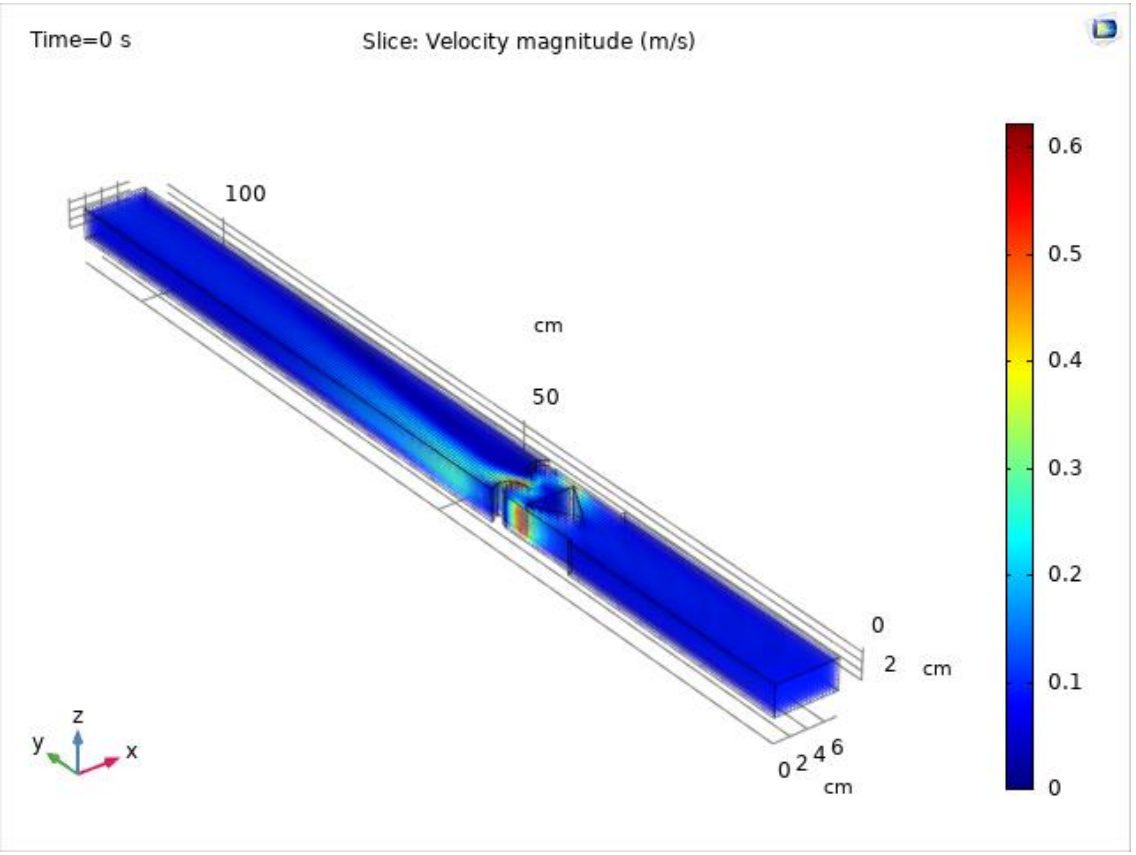
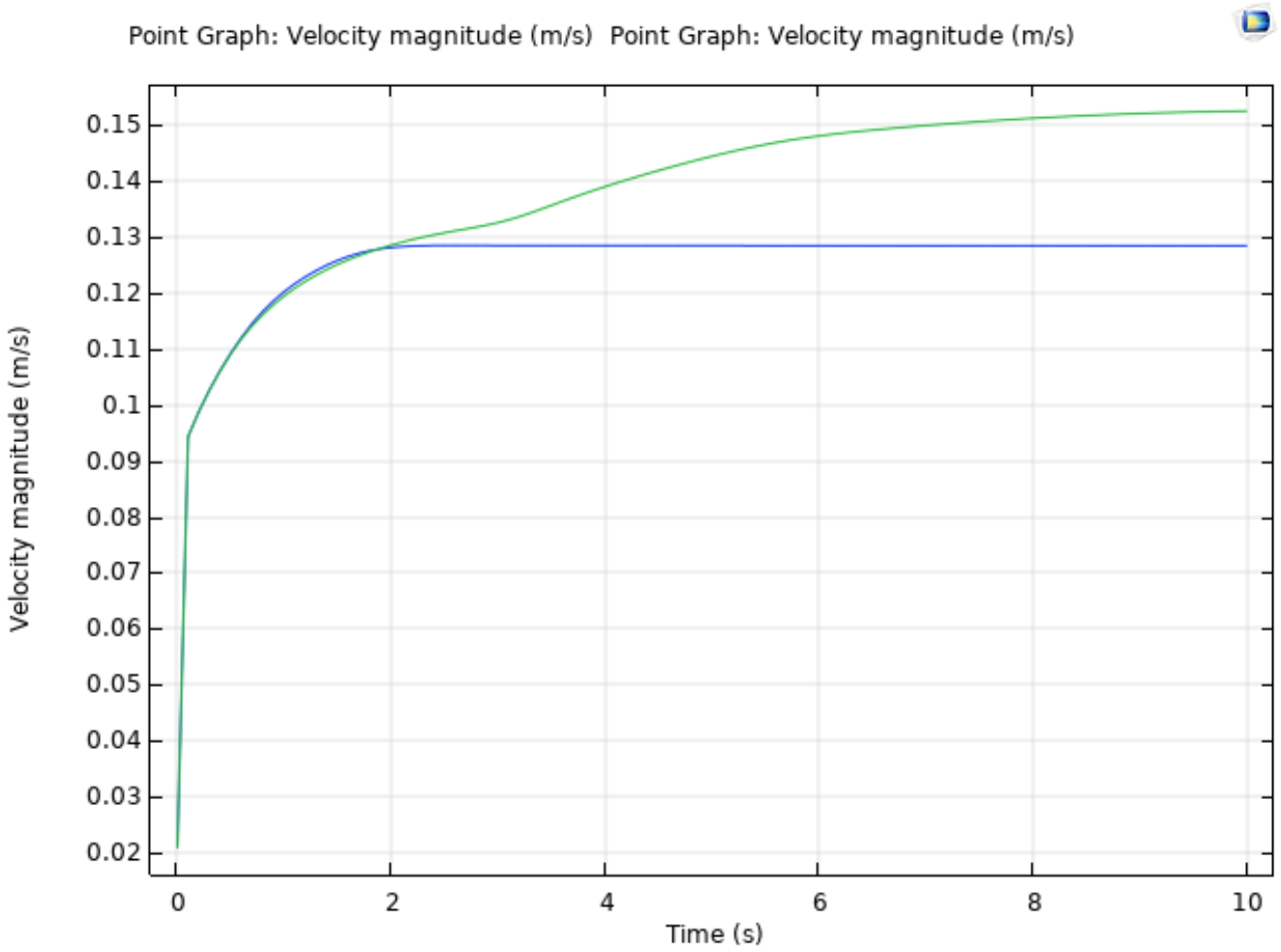
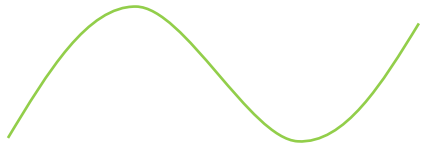
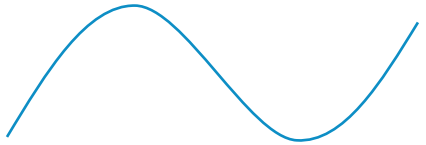






Кедергіге дейінгі



Кедергіден кейінгі

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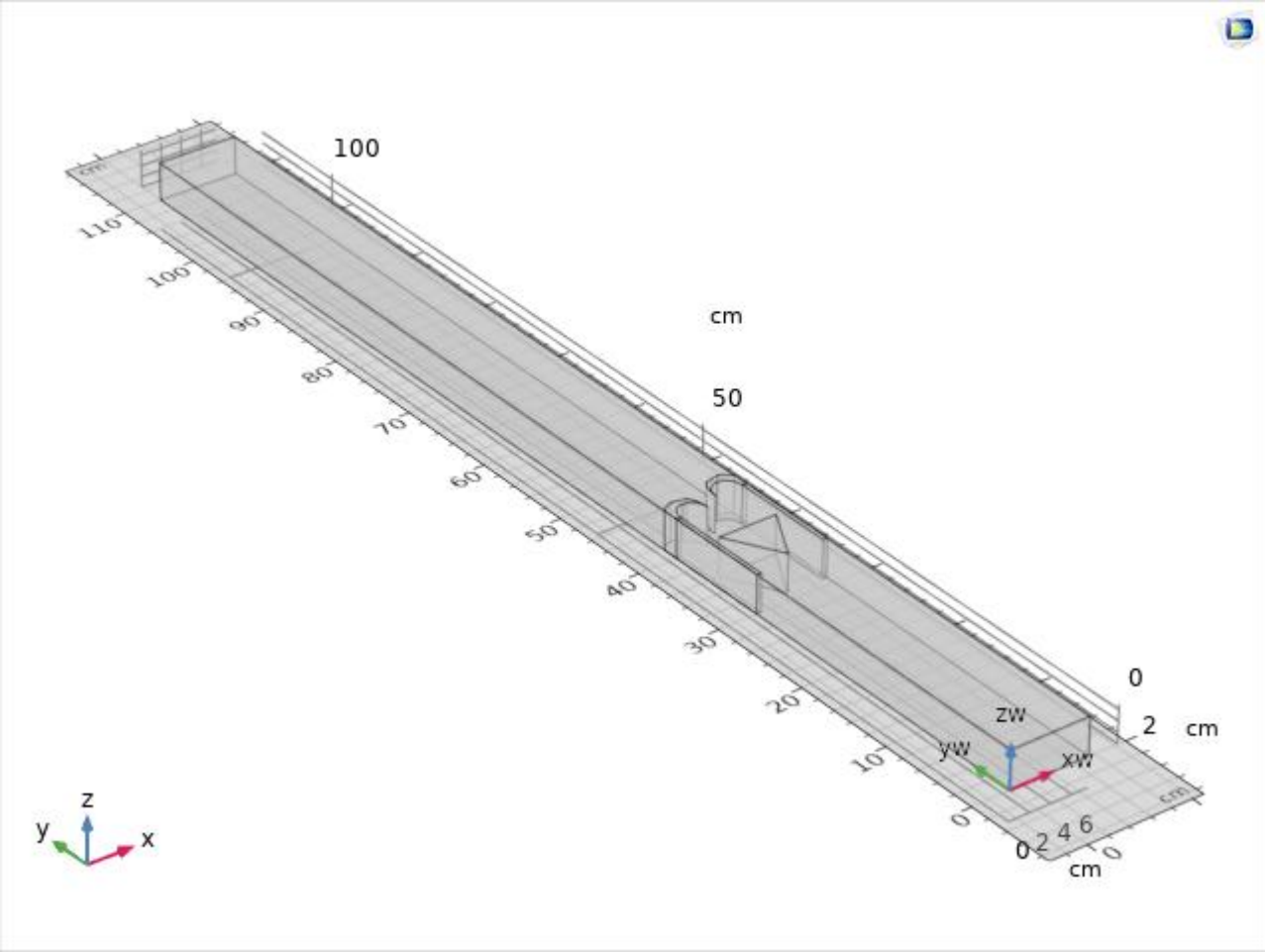
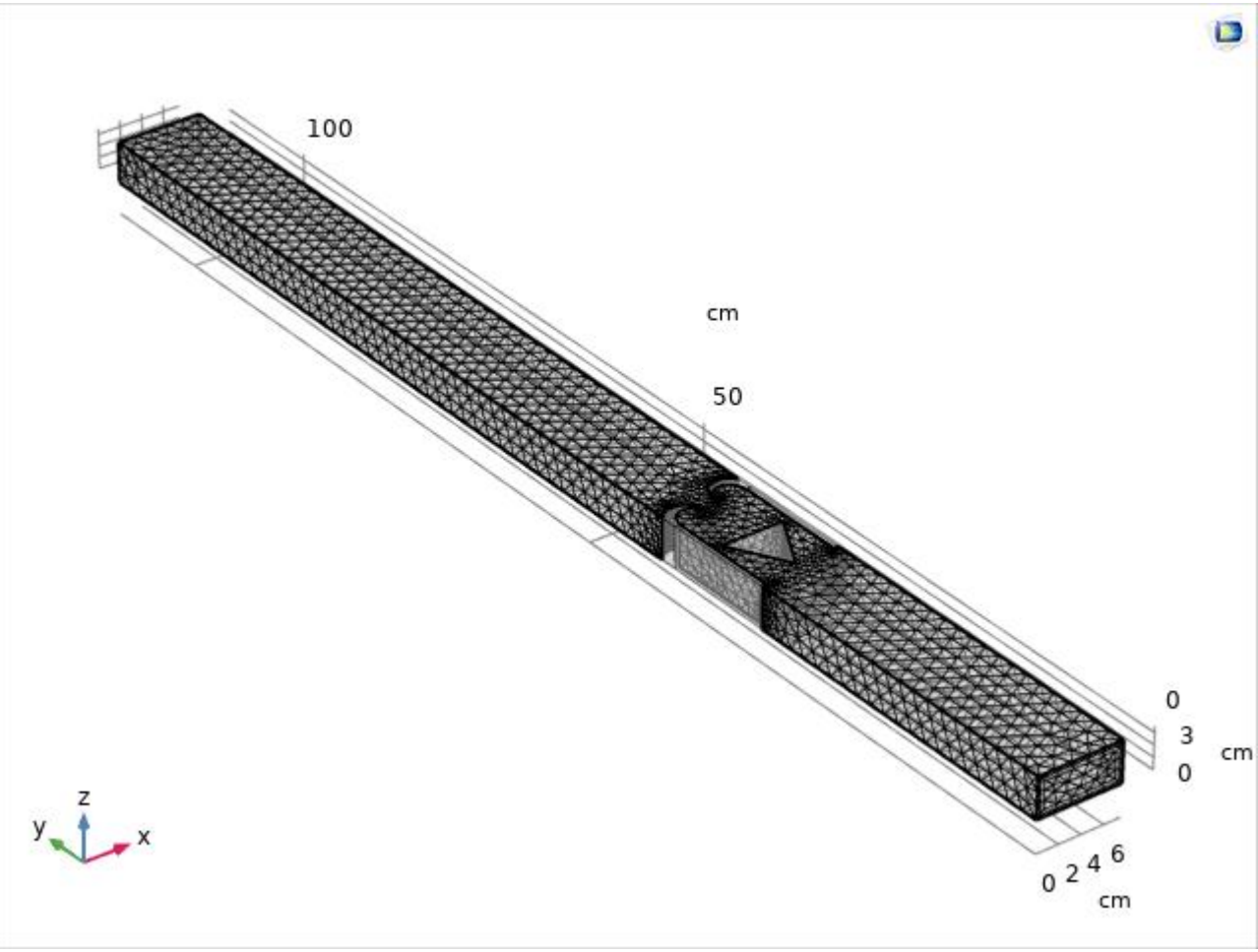
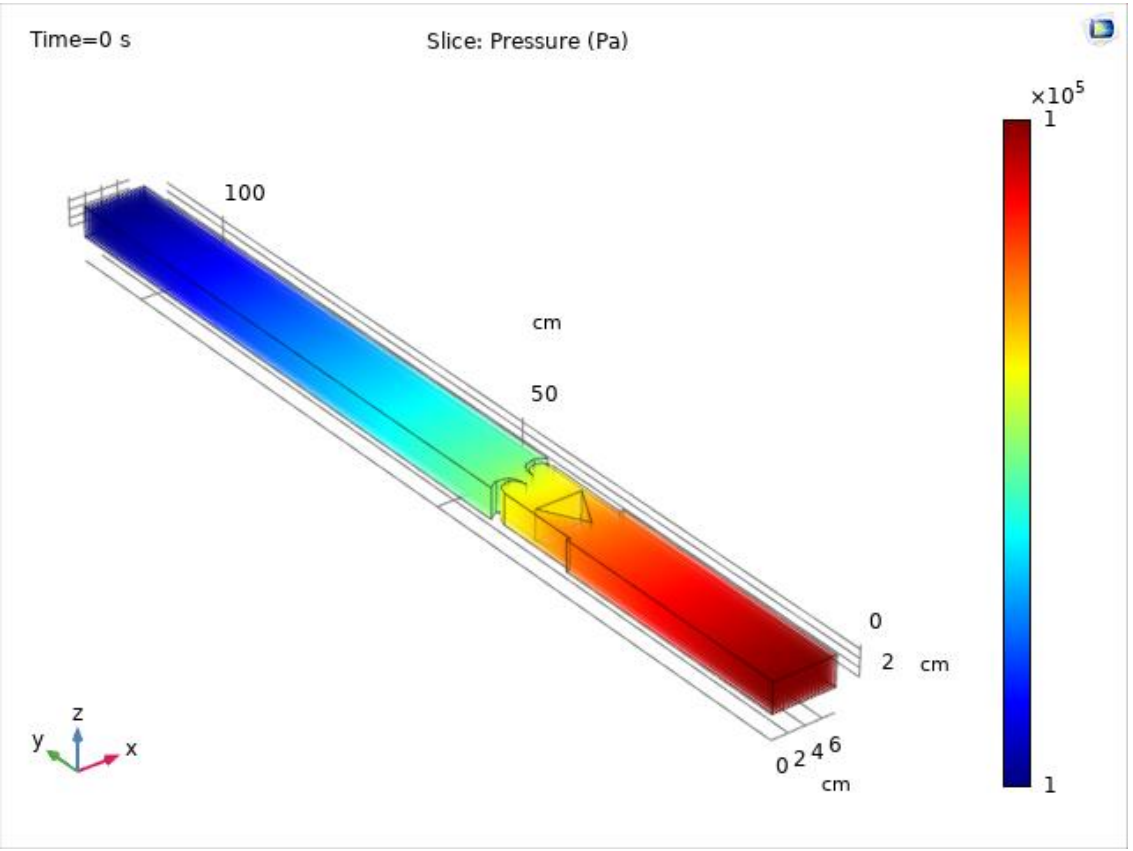


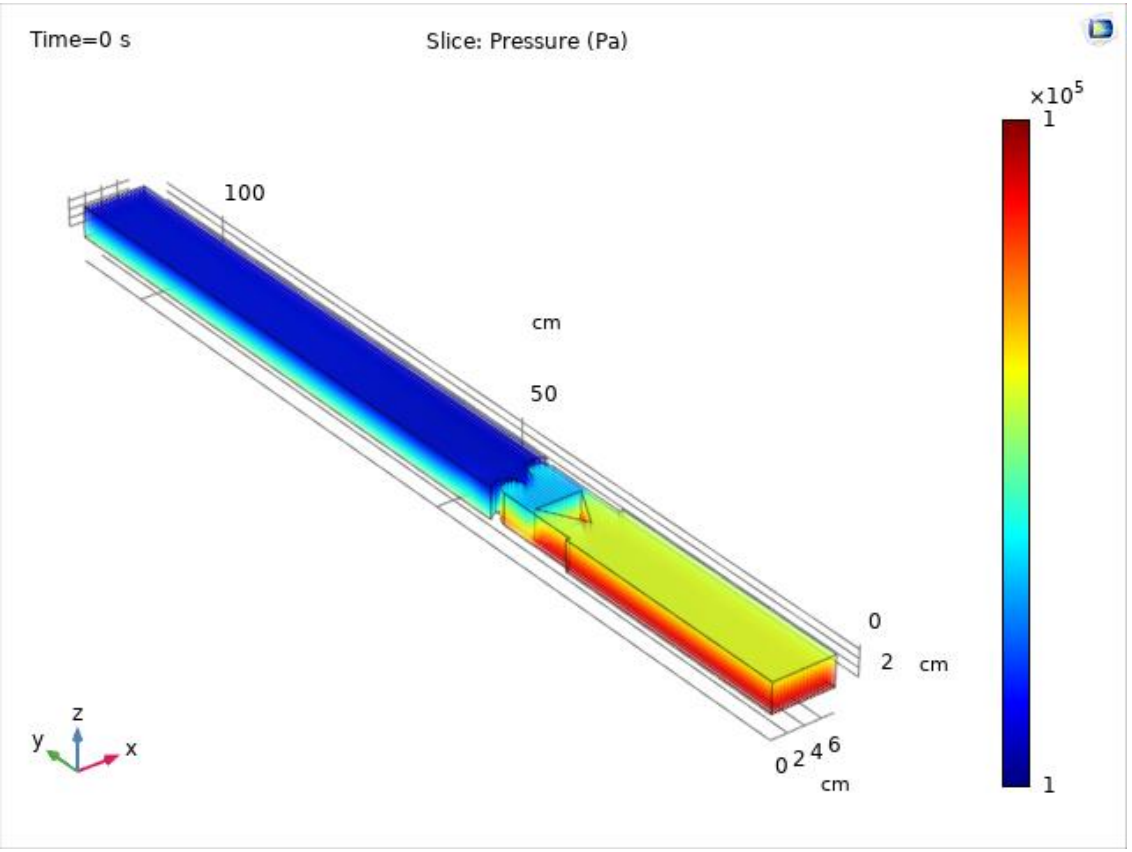


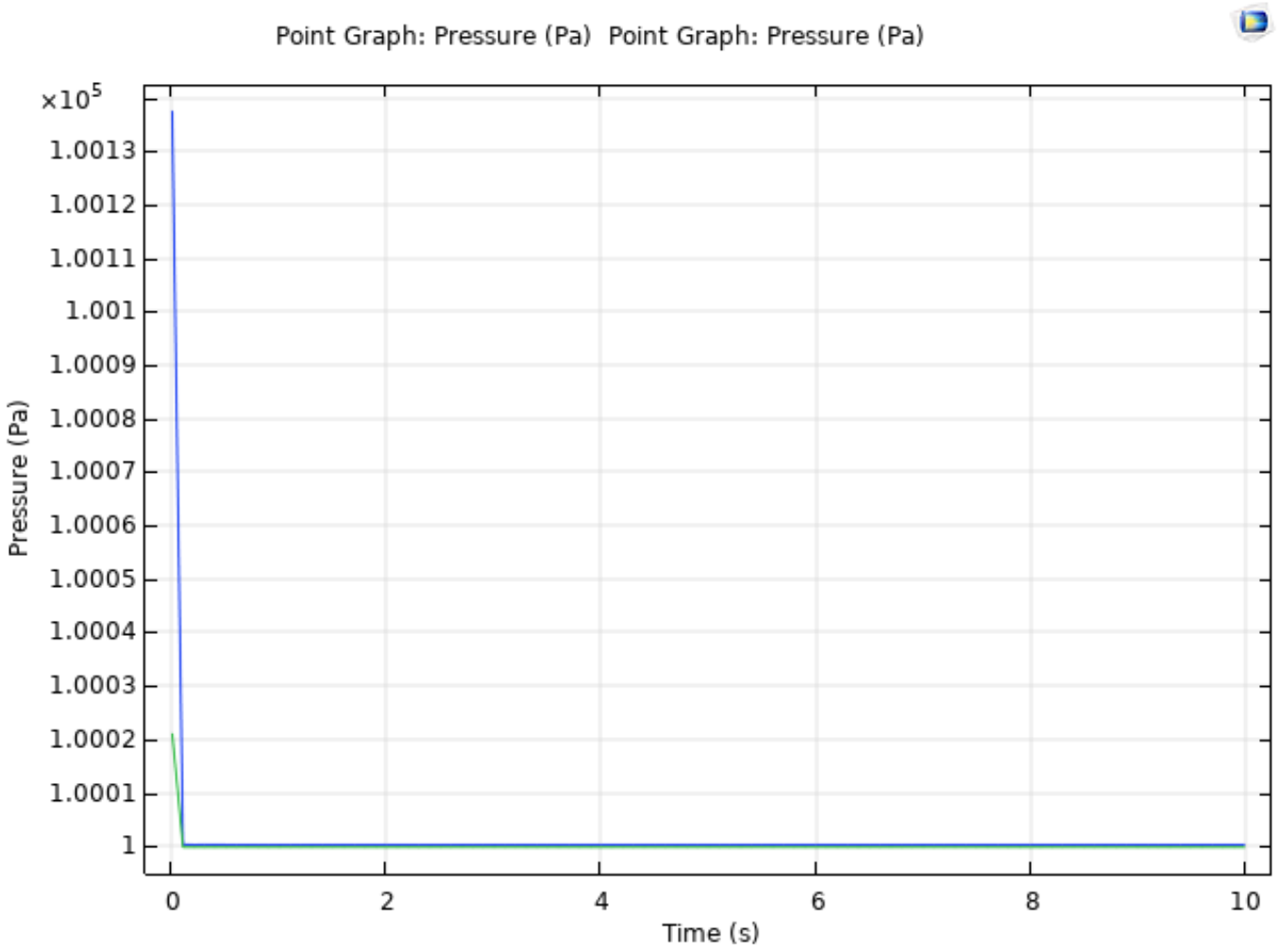
2-РЕЖИМДЕГІ ҚЫСЫМНЫҢ ӨЗГЕРУ КӨРІНІСІ

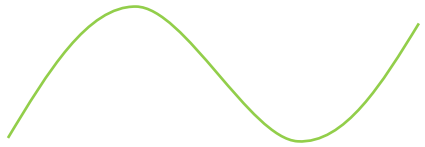
Бастапқы



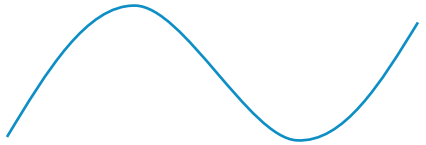
Соңғы







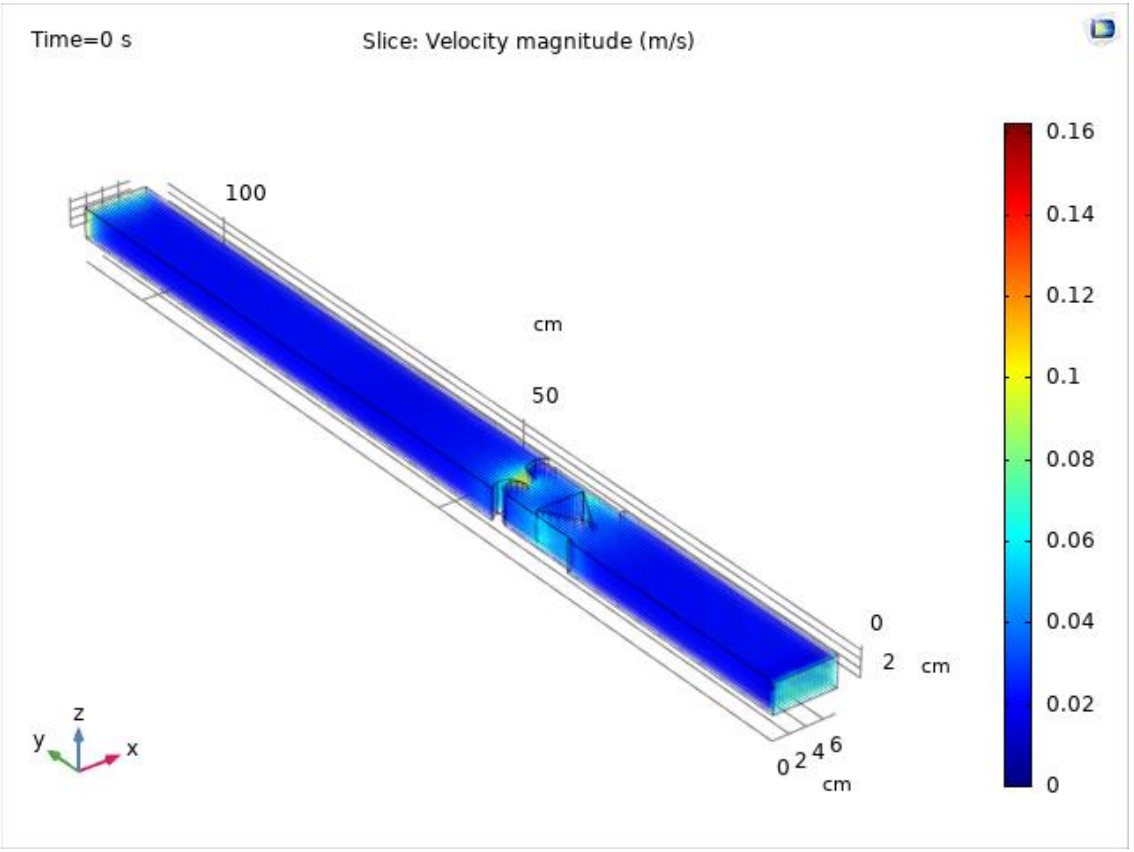
Кедергіге дейінгі



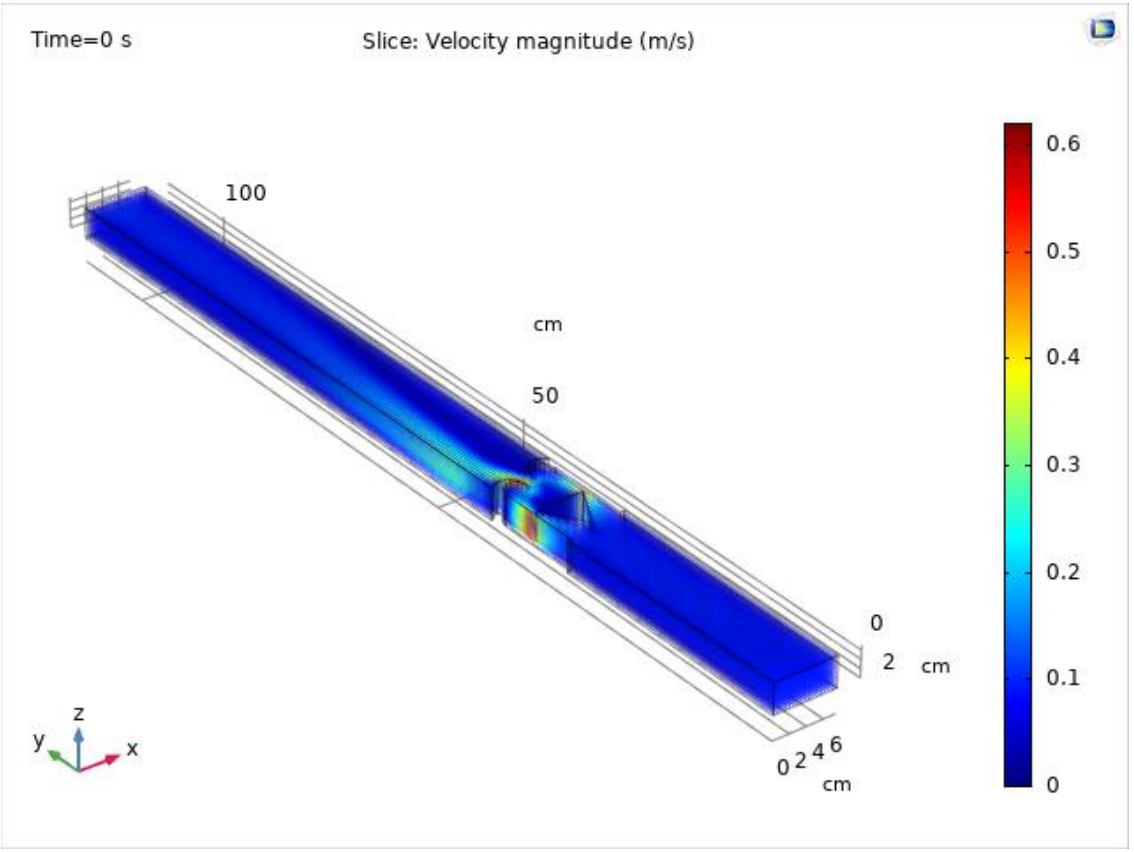
Кедергіден кейінгі

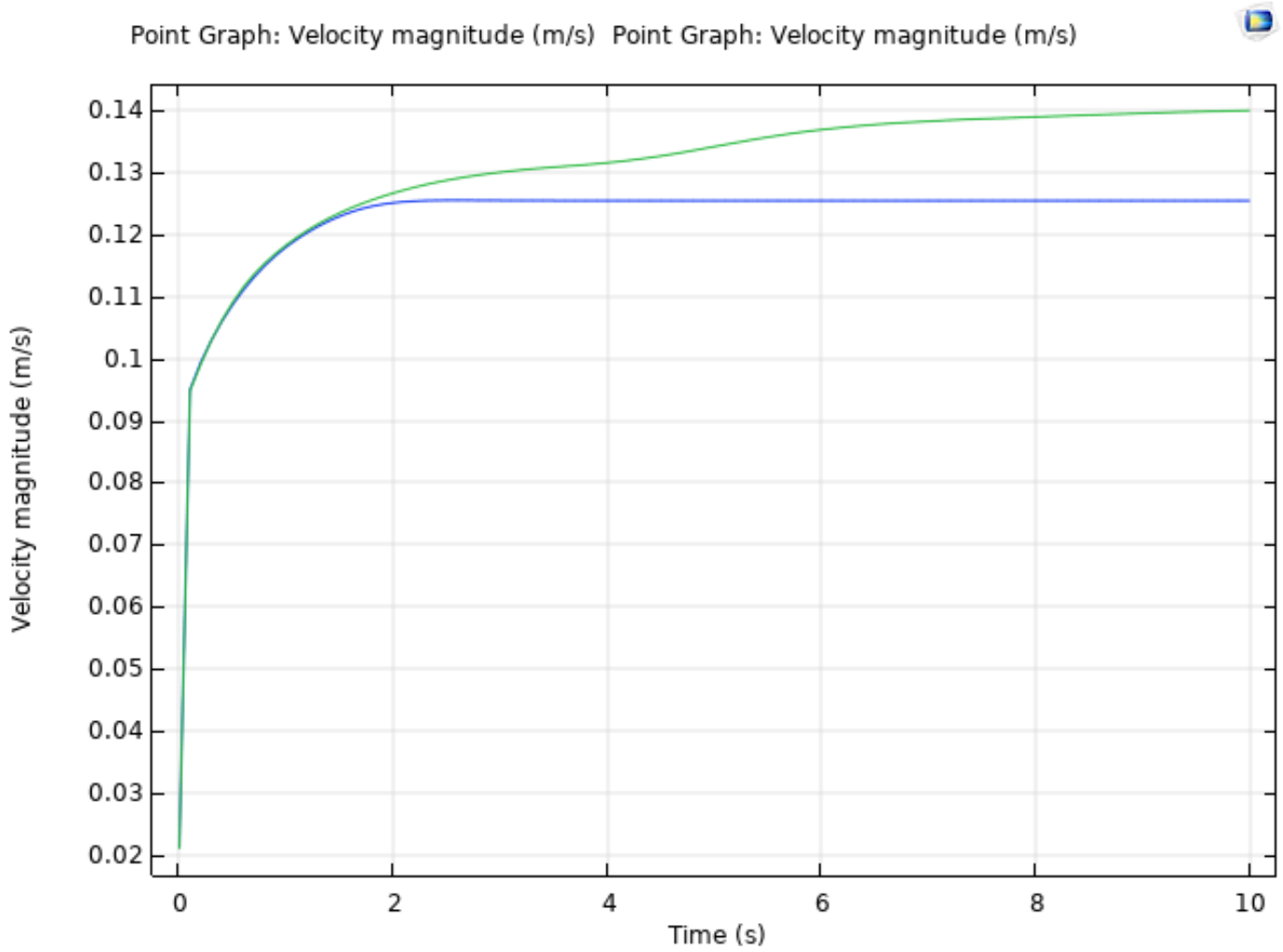
2-РЕЖИМДЕГІ ЖЫЛДАМДЫҚТЫҢ ӨЗГЕРУ КӨРІНІСІ

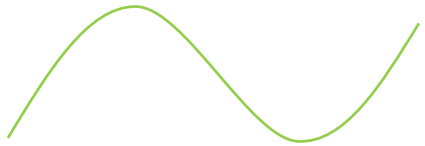
Бастапқы



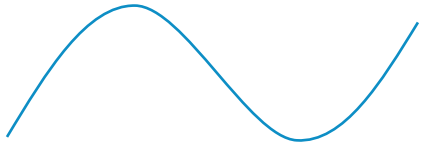
Соңғы





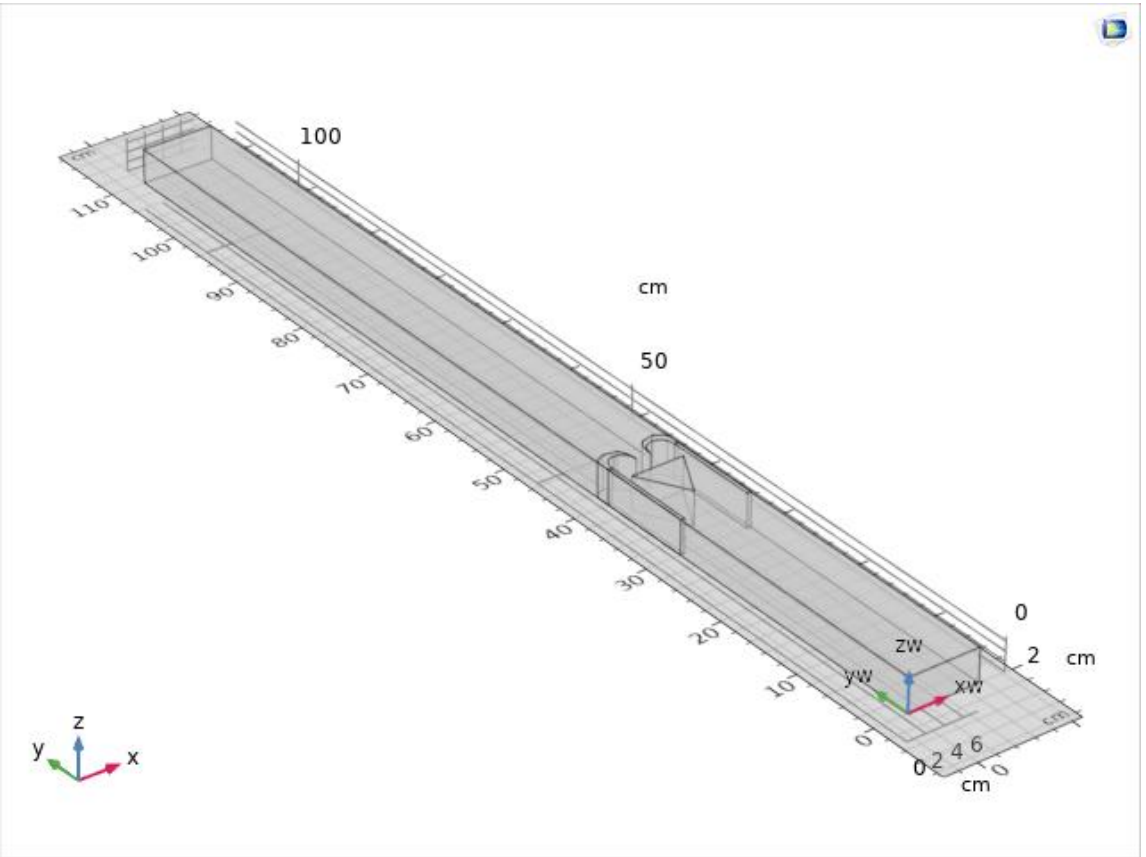


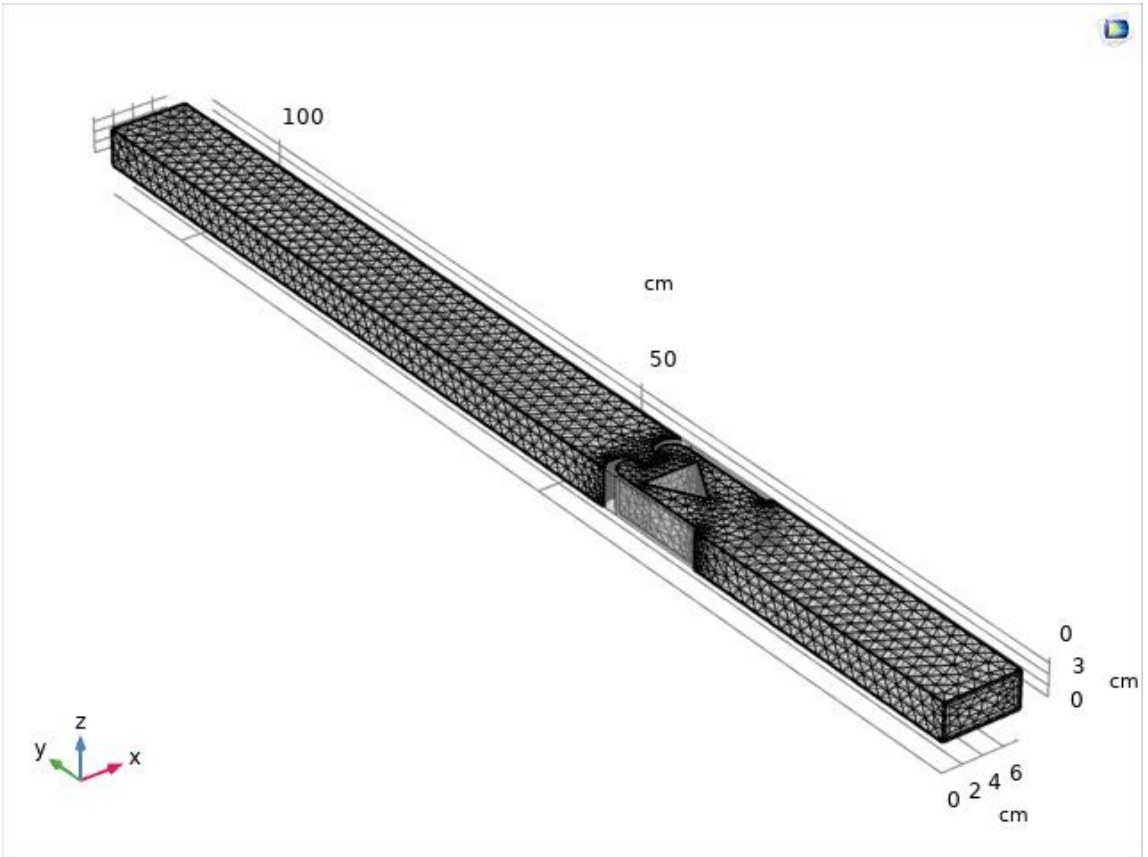
Кедергіге дейінгі



Кедергіден кейінгі

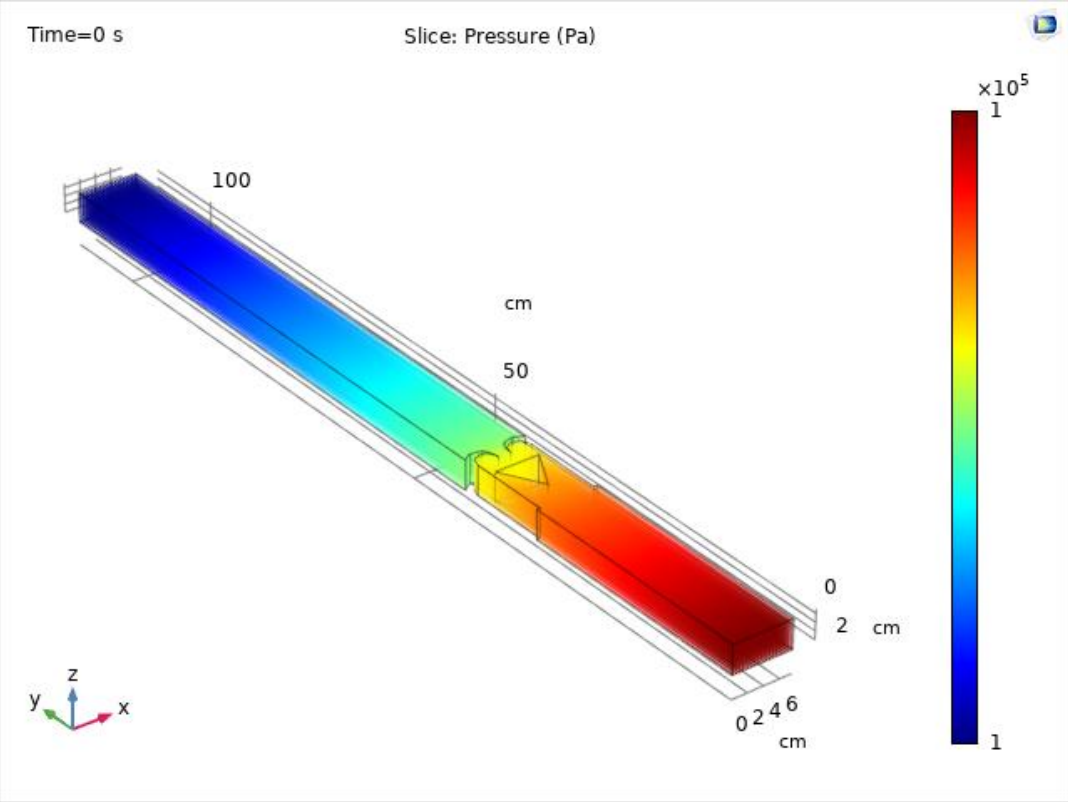
3-РЕЖИМ МОДЕЛІ





3-РЕЖИМДЕГІ ҚЫСЫМНЫҢ ӨЗГЕРУ КӨРІНІСІ

Бастапқы



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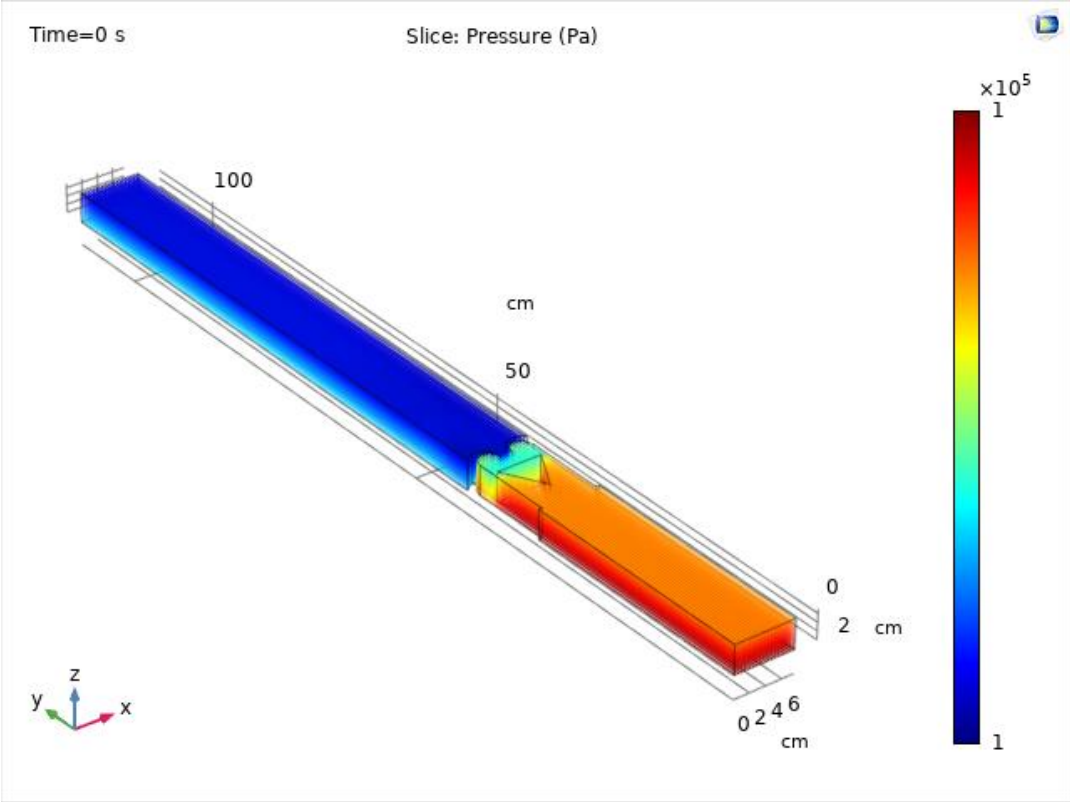
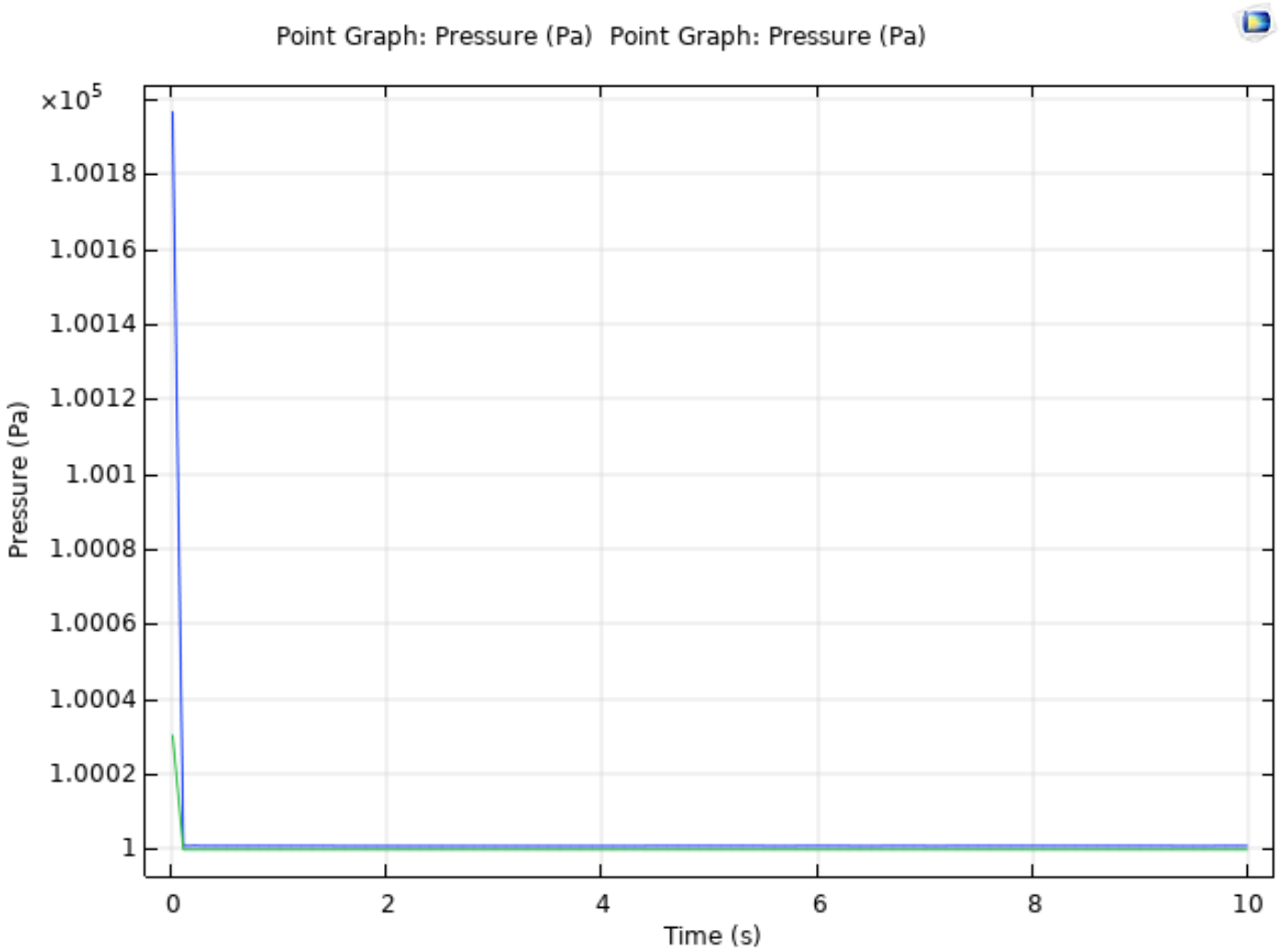
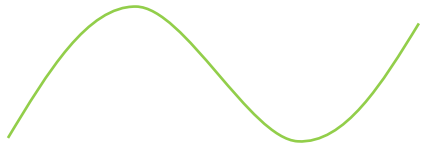
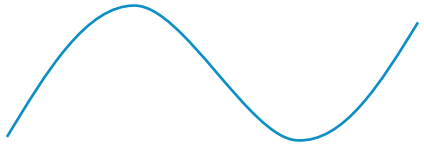






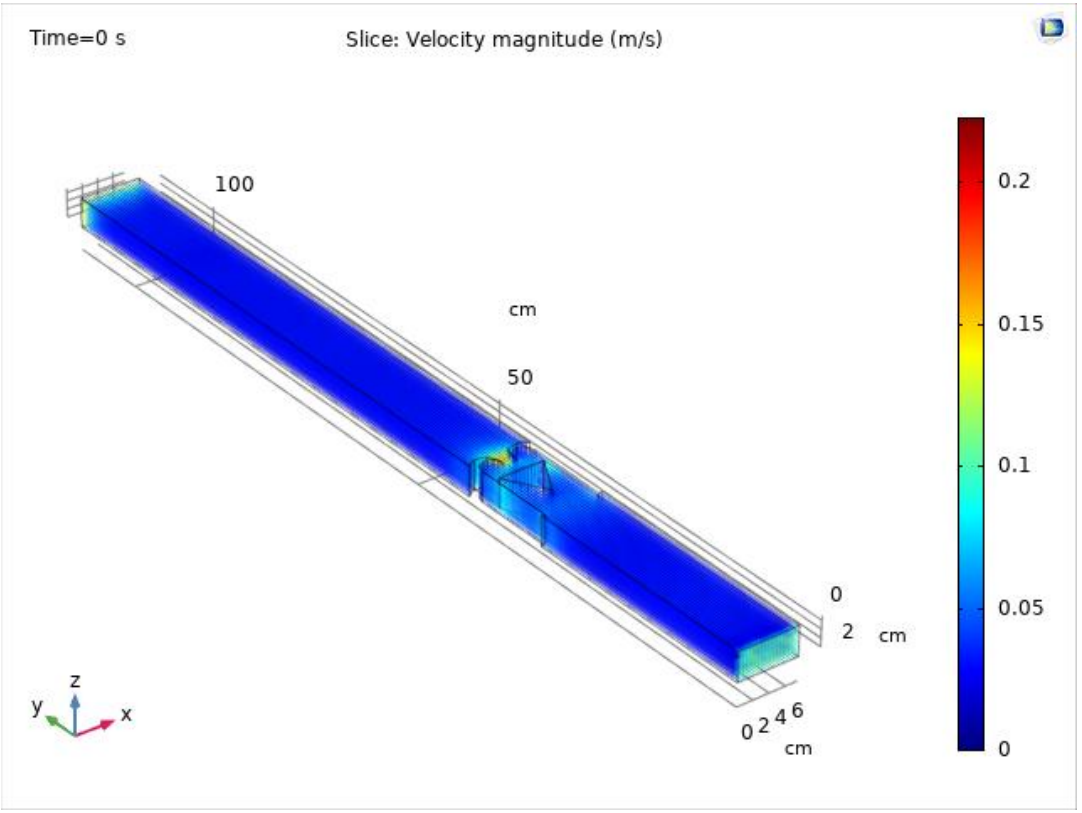
Кедергіге дейінгі



Кедергіден кейінгі

3-РЕЖИМДЕГІ ЖЫЛДАМДЫҚТЫҢ ӨЗГЕРУ КӨРІНІСІ

Бастапқы



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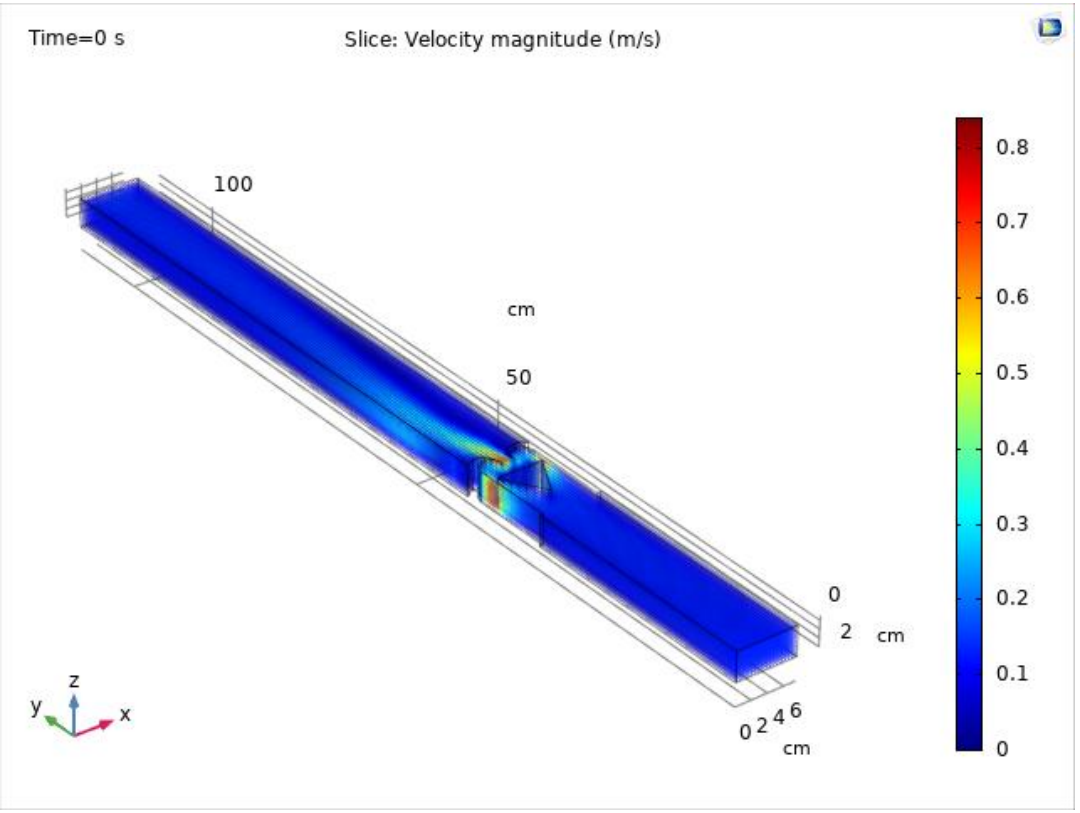

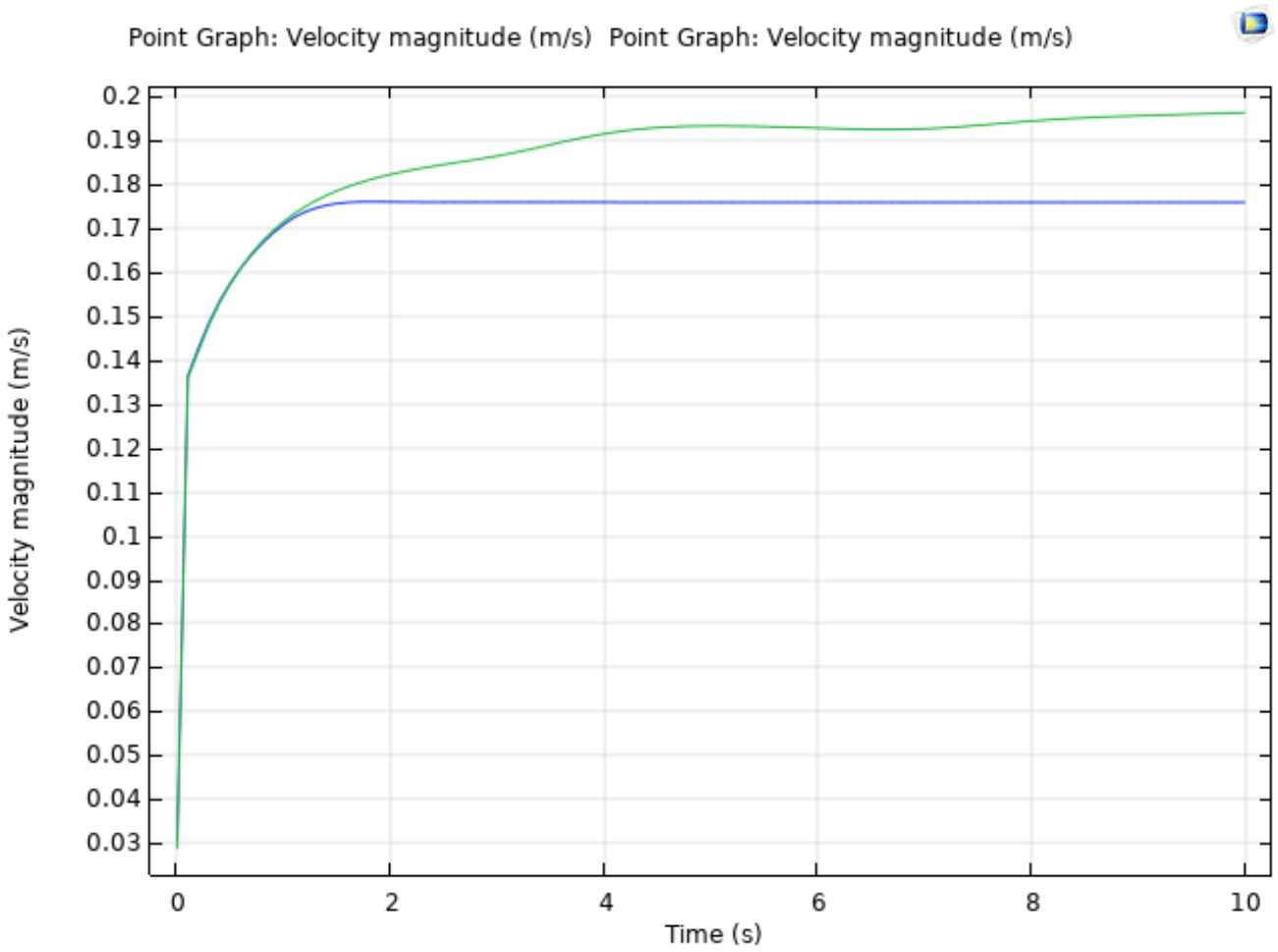

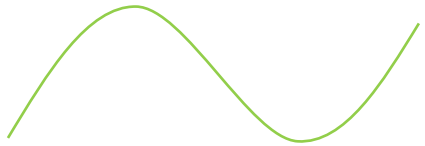

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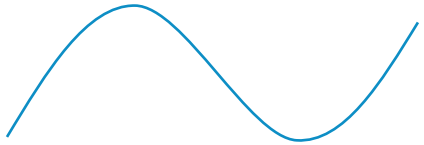
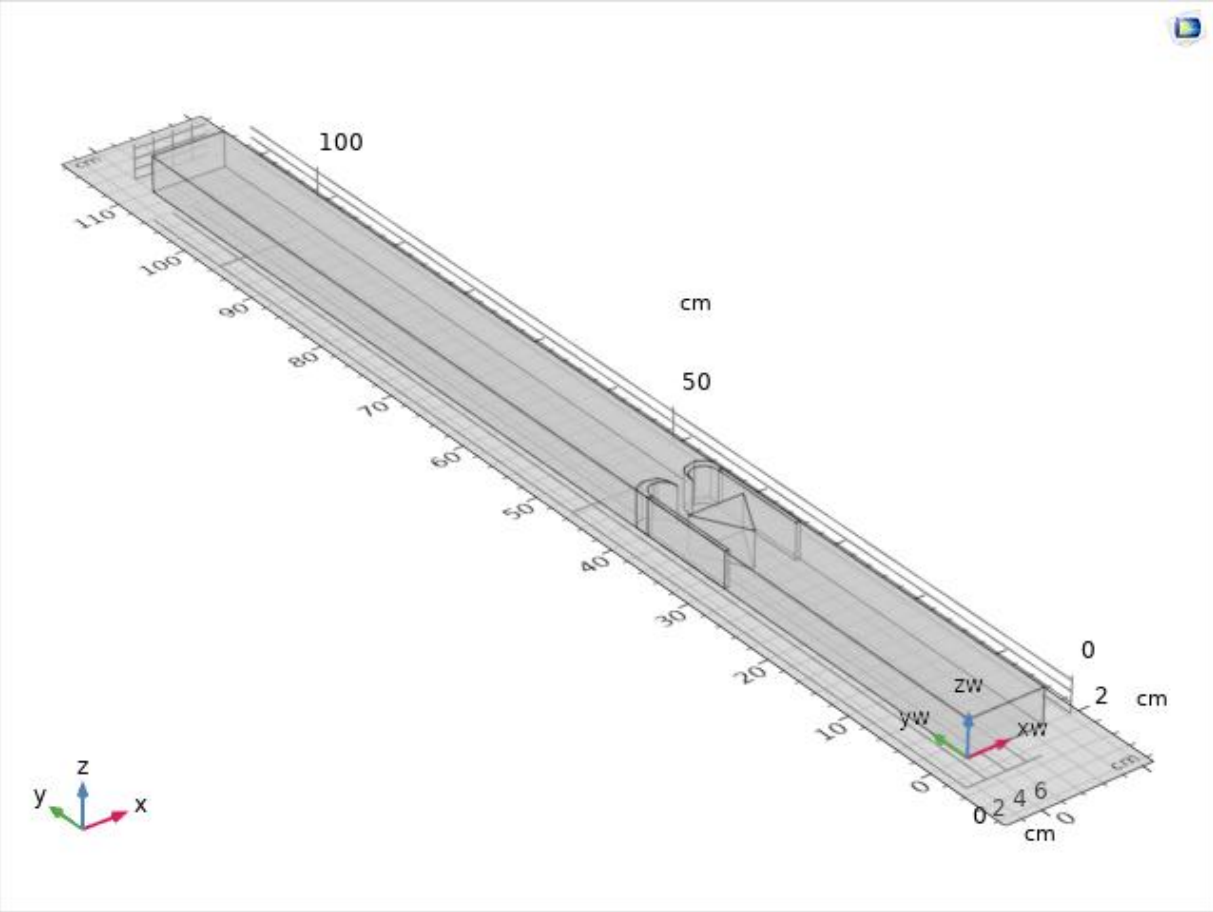
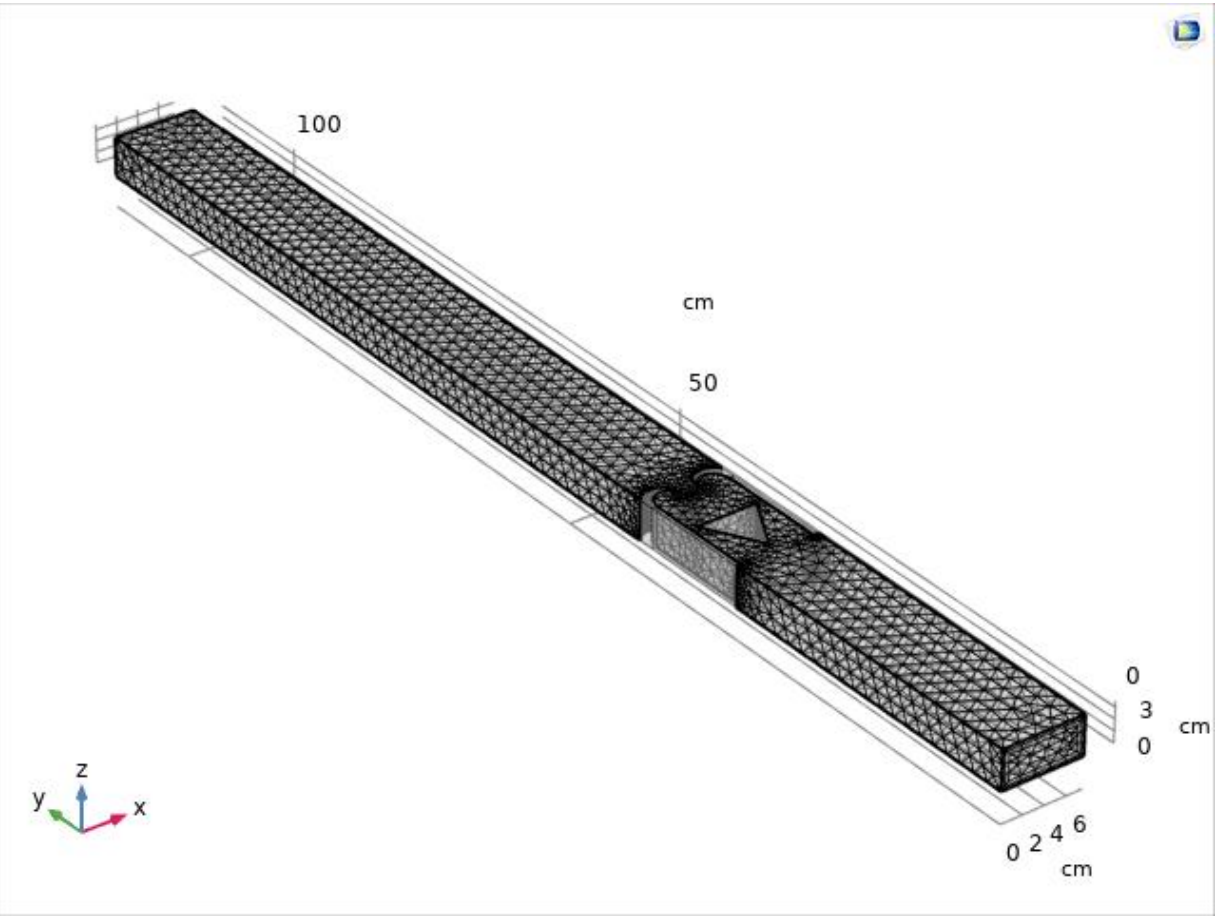


Кедергіден кейінгі

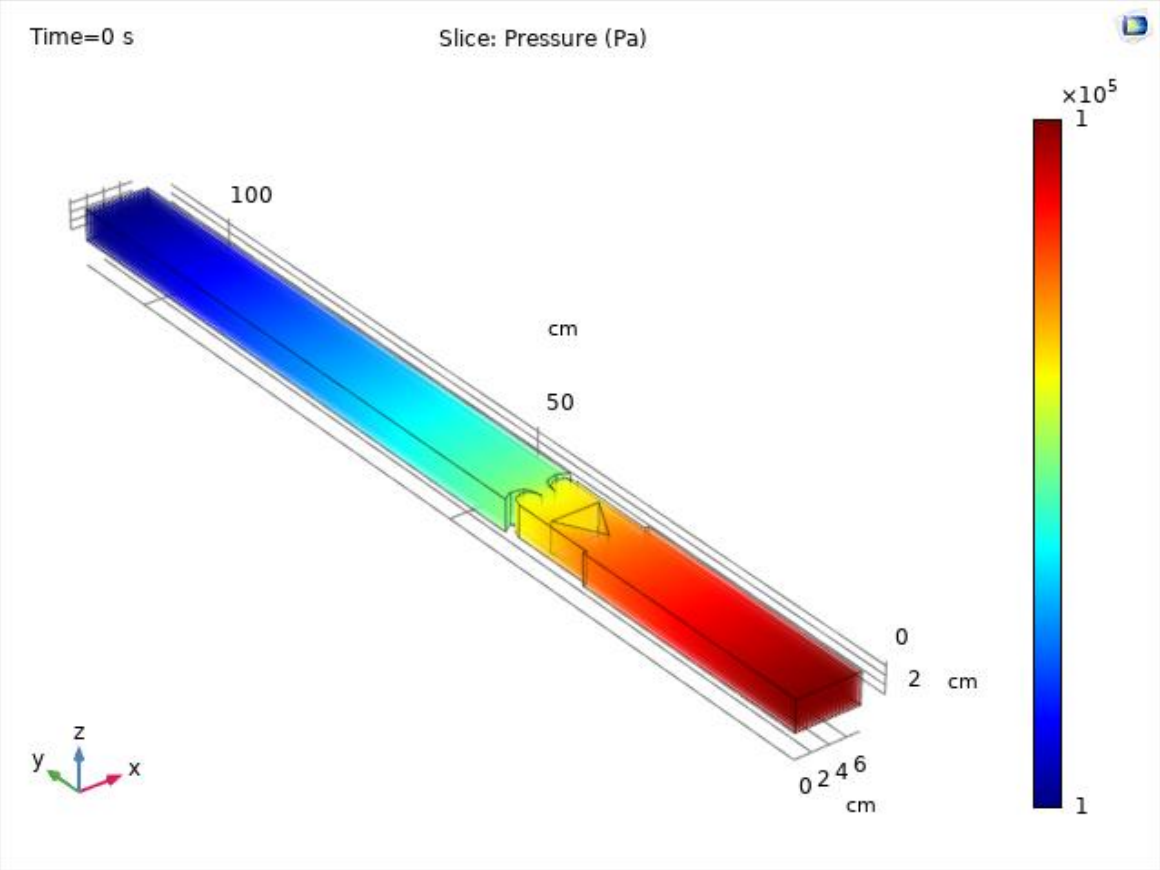
4-РЕЖИМ МОДЕЛІ





4-РЕЖИМДЕГІ ҚЫСЫМНЫҢ ӨЗГЕРУ КӨРІНІСІ

Бастапқы



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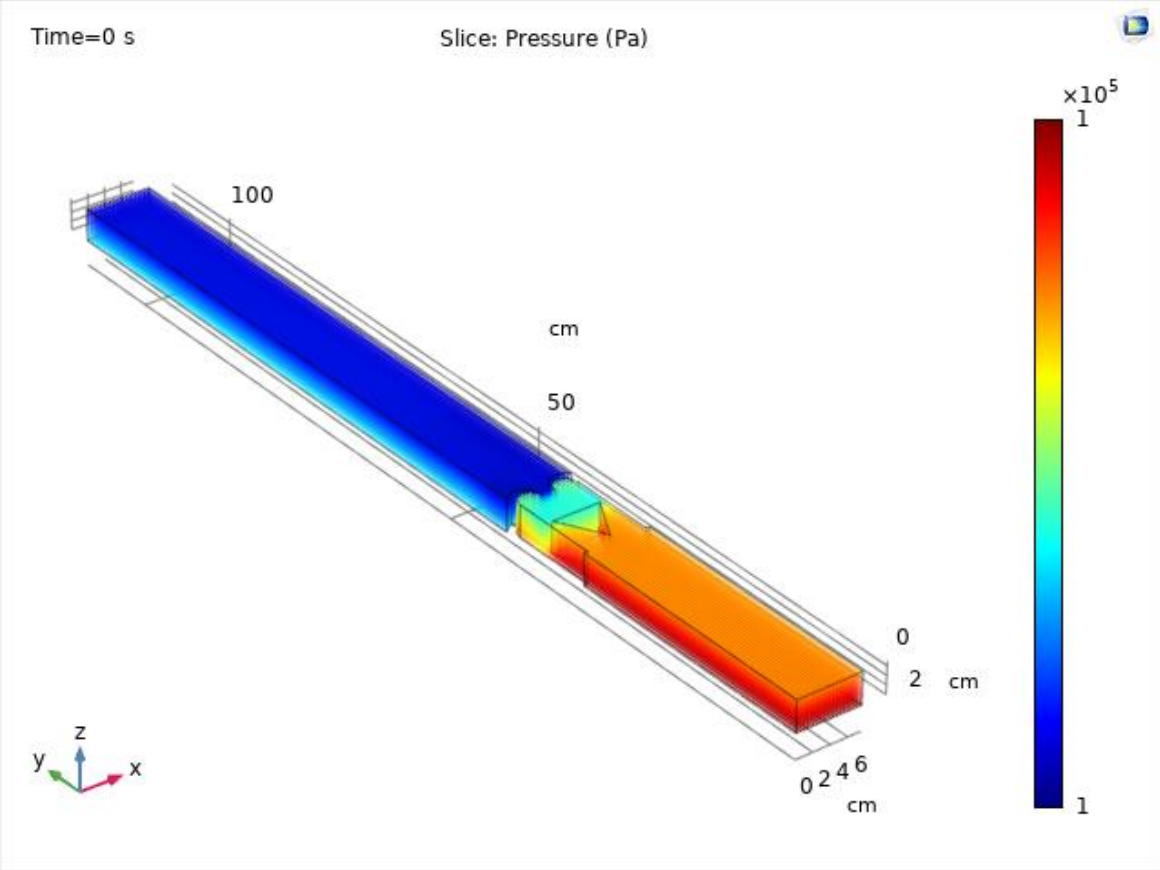
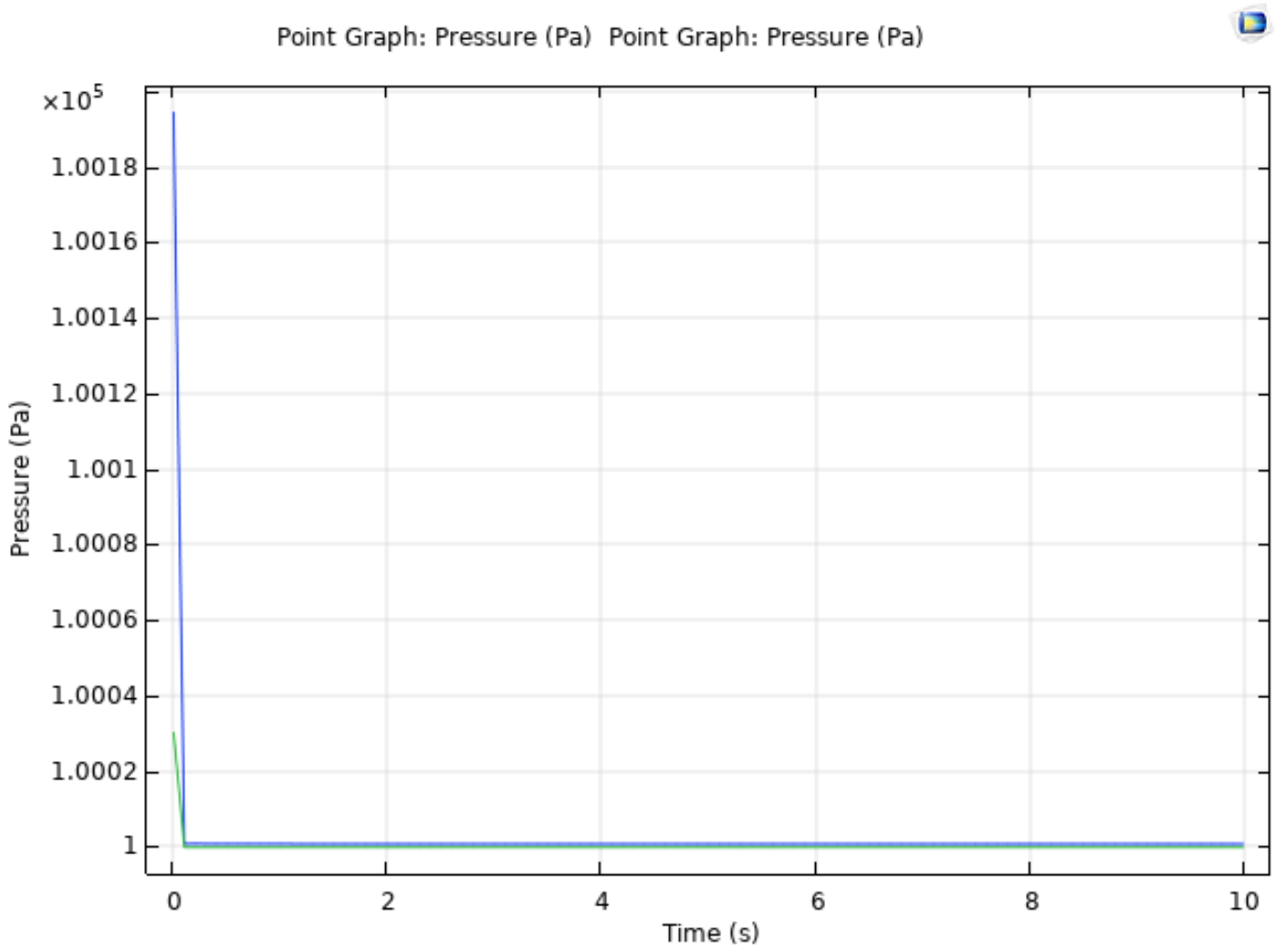
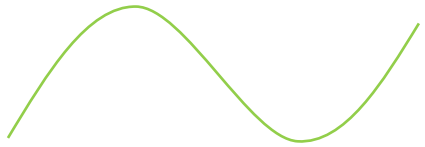
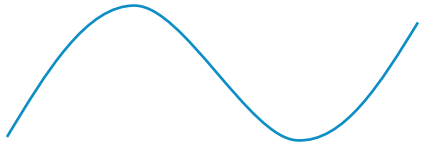






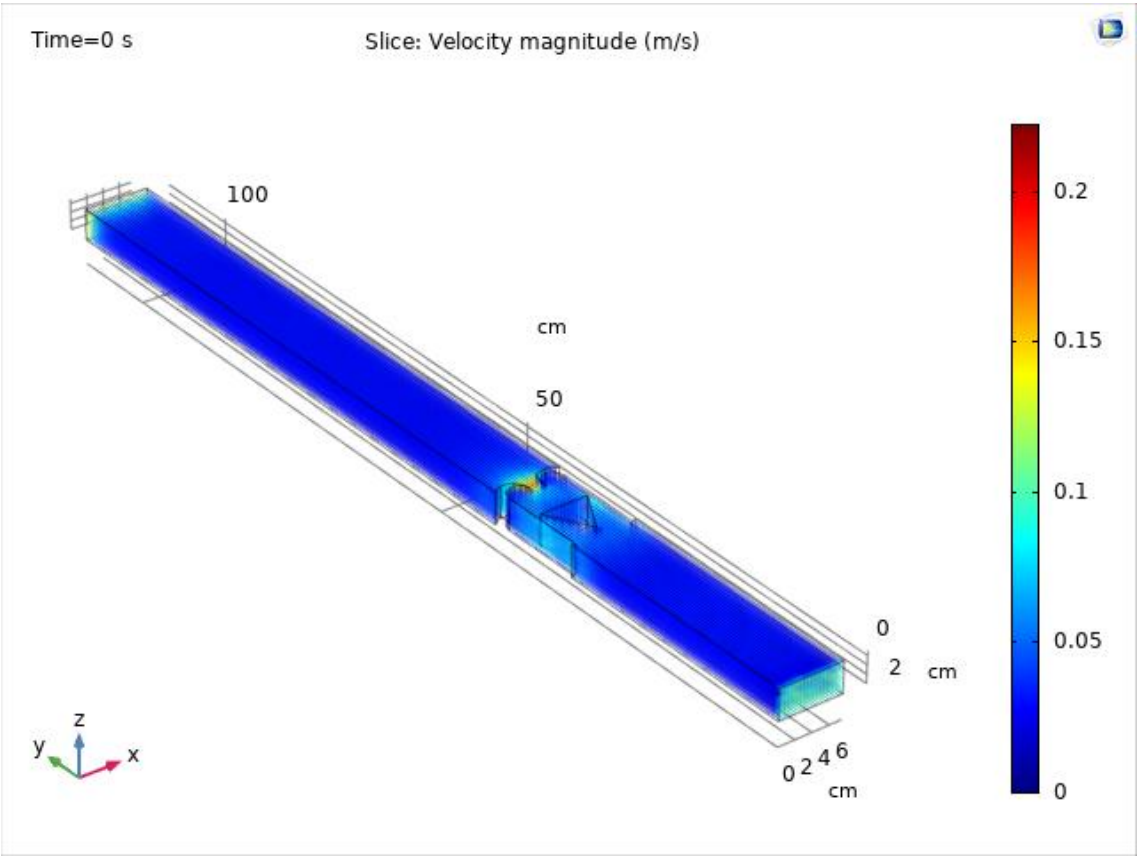
Кедергіге дейінгі



Кедергіден кейінгі

4-РЕЖИМДЕГІ ЖЫЛДАМДЫҚТЫҢ ӨЗГЕРУ КӨРІНІСІ

Бастапқы



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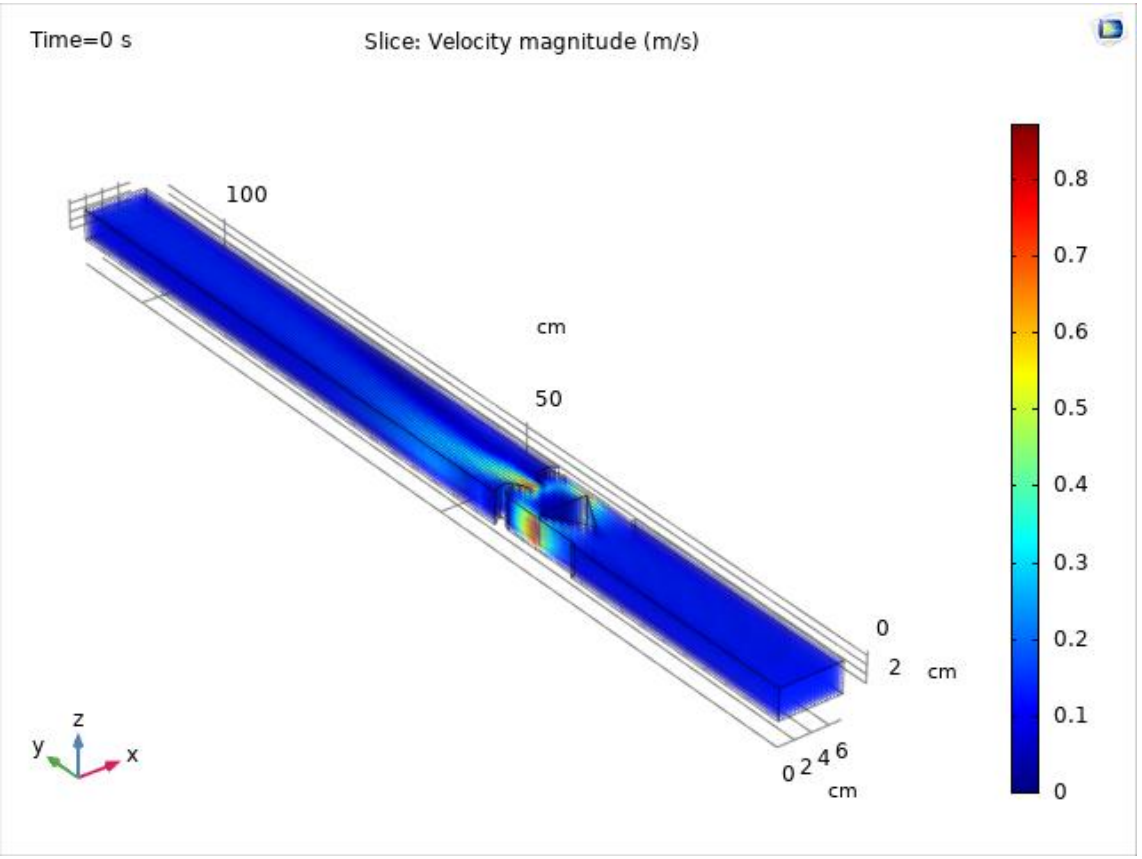
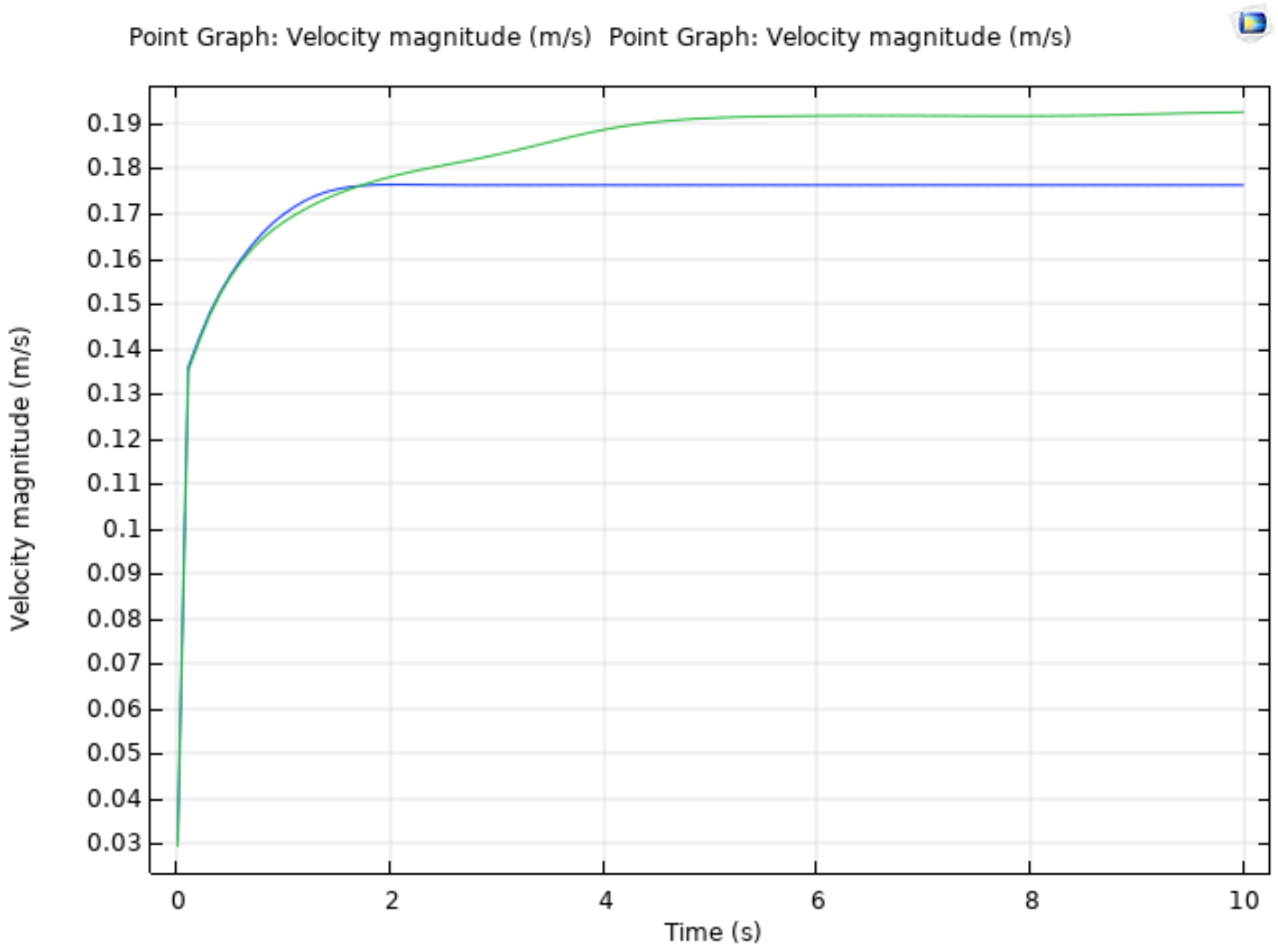
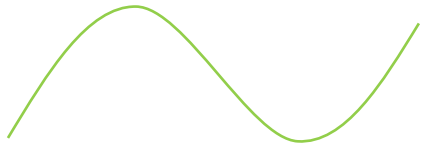
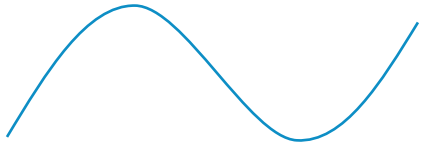


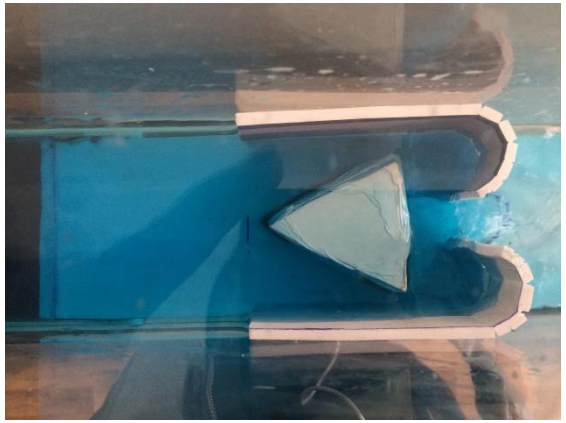
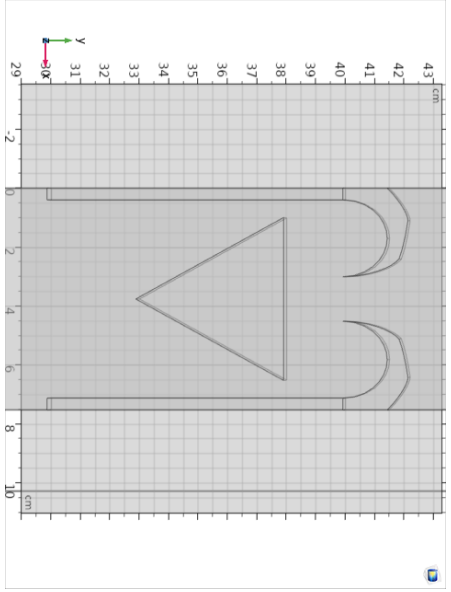




Кедергіге дейінгі



Кедергіден кейінгі

ҚОРЫТЫНДЫ

- Біздің тәжірибеде жасалған режимдерде ең тиімді модель - үшінші модель. Таңдалған үшбұрыш құйын тудырушы материалға мейілінше жақын орналасу керек және құйын тудырушы материалдың тангенсал бұрышы мен екеуінің ара қашықтығының турақтылығы сақталу керек.